YACHTING

VOLUME XIV, NUMBER 1 JULY, 1913 25 Cents a Copy $2.00 a year

The Philadelphia -Bermuda Power Boat Race

DREAM, COMMODORE LAGEN'S LITTLE 40-FOOTER, REPRESENTING THE YACHTSMEN' CLUB, WAS AGAIN THE WINNER OF THE 734-MILE RACE TO BERMUDA

By L. KROMHOLZ

AT five minutes before five o'clock on the afternoon of Wednesday, June 11, a wet and tired crew on the deck of the little 40-footer Dream drove their boat across the line off St. David's Head, Bermuda, marking the finish of the long course from Philadelphia, and hailed the committee boat anchored there.

"When did the Barbara get in?" were the first words hurled from her at the waiting committee boat across the water.

"Three-twenty-five-twenty this morning," came back the answer; and, making a hasty mental calculation, the owner, skipper and crew of the little boat, the smallest in the race, knew that they had again won the long grind—a victory that carried with it a second leg on the James Gordon Bennett Bermuda Challenge Trophy and $1,000 in cash. They knew before that they had sailed a good race, and now they knew that they had gone fast enough to prevent Barbara, the first boat to finish, from saving the time she had to allow the smaller boat—some 16 hours and 44 minutes—and that they had 3 hours 14 minutes and 56 seconds to spare.

After crossing the line, the Dream proceeded to the Royal Bermuda Yacht Club at Hamilton, where she dropped her hook and the crew received a great ovation from the members of the club and from the crew of the Barbara II when they went ashore. It had been a great race, and Com. Lagen, his staunch little boat and his game crew deserve all that can be said about them.

Though she did not save her time, the honor of being the first to finish belongs to Barbara II, owned by W. M. Duncan, of the Staten Island Yacht Club. In command of Com. J. G. N. Whitaker and a crew of veterans, she picked up the light on Gibb's Hill shortly before midnight Tuesday, passed the stake boat at 3:25:20 A. M., and dropped her hook in the channel after a voyage of 85 hours 14 minutes and 20 seconds from Philadelphia, the fastest time that has been made by any boat since 1909.

The Yachtsmen's Club of Philadelphia, which had charge of the race this year, had made unusual efforts to get a large fleet together for the race, and had succeeded in getting six bona fide entries that would have made the largest and most representative fleet ever started. With the usual delays and unforeseen contingencies that always seem to crop up in power boat races, however, but three of the boats were ready to start on the day of the race, these being Dream, Barbara II, and Tocsam II. The little 40-footer Tec was on hand, but she was a new boat which had been rushed to completion and several things developed which made it impossible for her to start, the principal one being that the gasolene tanks were leaking and it was not possible to get them fixed in time. It has been said that these tanks were made without baffle or swash plates and that the seams were started in bringing her around to Philadelphia. This was a great disappointment to her owner, W. T. Wheeler, who had made unusual efforts to have the boat ready in time. Talequah, owned by E. C. Hadley, of the Huguenot Y. C., had also entered, yet she was not completed on time, though work was rushed on her at the last, and she could not get to Philadelphia in time for the start.

However, three boats was a larger fleet than had ever gone before, except in the 1909 race, when four boats started; and as all of them were handled by veterans at the Bermuda Race, a close and exciting contest was looked for. The details of the three starters, with the time allowance of each, follow:

	Dream.	Barbara II.	Tocsam II.
Owner	C. L. Lagen.	W. M. Duncan.	L. W. Mulford.
Club	Yachtsmen's, Phila.	Staten Island.	Ocean City.
Designer	Bowes & Mower.	E. B. Shock.	M. M. Whitaker
Year built	1912	1912	1913
Length over all	40′	51′	45′
Length waterline	39′ 9″	46′	43′
Beam over all	9′ 6⅛″	11′	11′
Make of engine	2-cylinder Standard	4-cylinder Ralaco.	4-cylinder Sterling
Bore and stroke	6″ x 8″	7″ x 9″	5⅛″ x 8″
Horsepower	18.85	51.31	31.68
Time allowance	16 h. 44 m. 36 s.	Scratch.	13 h. 6 m. 36 s.

On the morning of Saturday the 7th, the three boats had been measured, had their tanks filled and all supplies aboard, and were collected at Race Street Wharf, Philadelphia, for a final inspection and good-byes. Shortly before the start a smart squall and thun-

BARBARA II, A STURDY LITTLE BOAT, THAT MADE THE FASTEST TIME IN THE RACE

der shower passed, sending all the crews hustling into their oilers; but before they pulled out into the stream to await the starting gun it had cleared again, and the sun had come out brightly. Promptly at 1:30 P. M. the boats were sent away on the long 734-mile course, Barbara II, with Com. Whitaker at the helm, being first to cross the line, followed closely by Tocsam II, in command of "Doc." Street, while little Dream was last over and received a warm greeting, as she carried the hopes and well-wishes of most of the Yachtsmen's Club. Barbara, with her 50 horsepower, soon shot out ahead and opened up quite a lead, with Tocsam trailing her and Dream, with her 18 horsepower, plugging away contentedly astern, knowing that the others would have hard work to beat her on rating.

They passed down the river in this order, followed by the fireboat Ashbridge, a United States Revenue Cutter and a number of launches and yachts, who were going down the river to give them a fitting sendoff. At the time the Ashbridge turned back, some 30 miles from Philadelphia, the Barbara was well in the lead and was increasing the distance between herself and the other boats right along. On the voyage down the river everything was made fast on deck for bad weather outside, as the weather forecaster predicted strong winds and unsettled weather off the coast.

Barbara passed out to sea between Overfalls Lightship and the Delaware breakwater late in the evening, more than an hour ahead of Tocsam, which boat and Dream passed the Lightship some time after midnight. The Barbara encountered N. E. winds of moderate strength when she got well clear of the coast, and the crew say that they carried the wind from this direction practically throughout the race and encountered a confused, choppy sea in the Gulf Stream which made the boat somewhat uncomfortable, though there was nothing to worry about. Com. Whitaker estimated that they were set too far to the eastward of their course, and, in consequence, lost two hours or so in time. They saw nothing of the other boats from start to finish, and picked up the light on Gibb's Hill about midnight of Tuesday, as has already been told. The crew of the Barbara was as follows: J. G. N. Whitaker, skipper; H. D. Campbell, navigator; Alexander Lamberton and Charles Hansen, engineers; F. D. Thurber, who crossed the Atlantic in the diminutive Sea Bird; Dr. Eugene Swayne, C. E. Barry and W. A. Bell.

The Dream also met rough water for a little 40-footer, though nothing was encountered as bad as her crew had met in the race of last year. A northeast wind of moderate strength was encountered soon after leaving the coast, which continued until Tuesday morning, making it wet and uncomfortable on deck for all hands. The weather was cloudy, so that but few sights were possible, and it was necessary to rely principally on dead reckoning for position. When some 140 miles N. W. of Bermuda the Quebec steamship Bermudian was sighted about nine o'clock in the evening and passed close alongside, so that the crew of the little racer knew that they were dead on their course.

Early in the morning of Wednesday, when close to Bermuda, some engine trouble developed, due to water in the gasolene, and this caused a delay of several hours. All their troubles, however, were forgotten when the islands were sighted and the finish line crossed and the crew heard that they were only thirteen hours behind the Barbara. With Com. Lagen, as crew, were the following: George E. Goldbeck, navigator; J. J. Sproul, engineer; Frederick Biddle, William T. Wheeler, owner of the Tec: George Alloway, Owen Darrel, of the Royal Bermuda Yacht Club, and Tom Larsen, a paid hand.

Tocsam in command of "Doc." Street, who was skipper of the Kathemma in last year's eventful race, did not cross the finish line until nearly 12 hours after the Dream, arriving at 4:30 o'clock Thursday morning. As she only had an allowance of 13 hours 6 minutes 36 seconds, and finished 25 hours 4 minutes 40 seconds after the scratch boat, she was beaten by almost 12 hours, corrected time. Her skipper reported encountering bad weather on Sunday, with a rough, confused sea and cloudy weather throughout the trip, making sights difficult. The little boat, however, behaved splendidly, and at no time gave the crew any uneasiness, though the absence of any reliable observations caused them some worry as to their actual position. With Dr. Street, was R. L. Young, navigator, who was one of the navigators of the Kathemma in last year's race; L. Willard Mulford, owner of the boat; W. Blumreich and H. Brown, engineers; Fred Spurling, Charles Curran, Richard Mitchell and G. Delany.

While the Barbara made better time than has been made on any race during the last few years, she did not by any means equal the record which is held by Ailsa Craig, which, in the second race, in 1907, made the trip in 65 hours 45 minutes from New York.

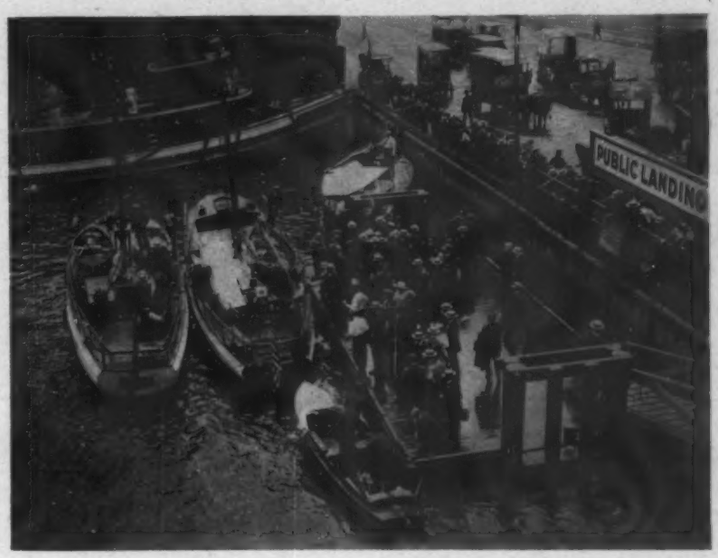
COMMODORE C. L. LAGEN, TWICE WINNER OF THE BERMUDA CUP

TOCSAM II, THE OCEAN CITY Y. C. REPRESENTATIVE, IN COMMAND OF "DOC" STREET

while in 1909 Heather's time over the same course was 80 hours and 56 minutes.

The table below shows the elapsed and corrected times of the boats, computed from figures sent from Bermuda.

On Tuesday, June 17, three of the racers started on a race back from Bermuda to Bay Ridge for cups offered by the Crescent Athletic Club. The boats starting back were the Barbara II, Tocsam II and the Trixie, a Bermuda boat, which was started merely to comply with the rules as to the minimum number of starters. The Dream, which had expected to race back, was prevented at the last moment by trouble with her gasolene tanks and propeller, and she was detained until Wednesday for repairs, when she left for Ocean City direct. While Barbara arrived first, Tocsam II saved her time and won by 5 hours 13 minutes and 51 seconds, corrected time. Barbara's elapsed time was 75 hours 41 minutes 30 seconds, and Tocsam's 82 hours 23 minutes and 15 seconds.



AT THE LANDING FOR LAST INSTRUCTIONS AND GOOD-BYES

SUMMARY OF THE RACE TO BERMUDA

	Start.	Finish.	Dif. in Time, Min.	Elapsed Time.	Corrected Time.
Barbara II	June 7, 1.30 P. M.	June 11, 3.25.20 A. M.	41	85.14.20	85.14.20
Dream	June 7, 1.30 P. M.	June 11, 4.55.00 P. M.	41	98.44.00	81.59.24
Tocsam	June 7, 1.30 P. M.	June 12, 4.30.00 A. M.	41	110.19.00	97.12.24
Average speed of Barbara II					8.61 knots.
Average speed of Dream					7.43 knots.
Average speed of Tocsam					6.65 knots.

The following extracts from the log of Barbara II on the trip will give some indication of conditions met with by that contestant. The others had very much the same experience:

June 7—11 P. M.—Passed Overfalls light vessel on port hand, distant ½ mile. Covered 90 miles from the start in 8½ hours, or better than 10 knots an hour. After leaving light vessel steered S. E. ¼ E. Wind N. E. by E.; strong and puffy, kicking up considerable sea.

Sunday, June 8—8 A. M.—No change in weather, but sea making up. At noon were on the inner edge of stream; position by dead reckoning, Lat. 38° 20′, Long. 72° 25′; course S. E. by E.; wind N. E.; velocity 20 miles; sails drawing well; logging 10½ knots; conditions wet and uncomfortable.

Monday, June 9—4 A. M.—Wind N. E., heavy; sea rough. During the morning watch sea was roughest yet encountered. Noon, still cloudy; no sights; position by dead reckoning; Lat. 35° 49′; Long. 68° 53′. In afternoon engine stopped for 55 minutes, owing to water in gasolene.

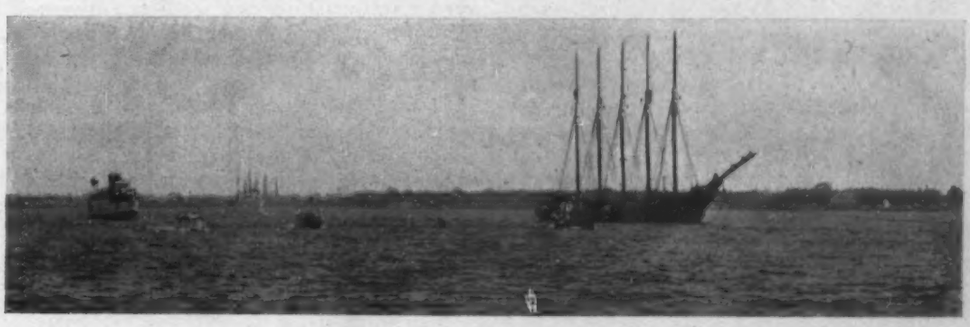
Tuesday, June 10—8 A. M.—Cloudy, no chance to get an observation. Distance by dead reckoning to the finish, 87 miles. Heavy rain squalls during the afternoon; 3:30 P. M. sun appeared through the clouds, and we got a sight, and another one at 4:30 P. M., from which we worked up a Sumner, which made Gibb's Hill Light appear to bear S. S. E. ¼ E., distant 20 miles. Picked up Gibb's Hill Light at 9:50 P. M. Engine stopped two hours, owing to trouble with exhaust valves. Hove-to more than two hours for repairs, which were finally effected.

Wednesday, June 11.—Passed stake boat off finish line, St. David's Head, 3:25:20 A. M., the first boat to finish.

One exciting moment occurred during the passage when, in lighting the stove in the galley, some alcohol was spilled, which ignited and set fire to the woodwork. However, the prompt use of extinguishers put out the blaze before any damage was done. The crew say that during the run considerable water found its way below, as is always the case in a small boat when water is flying. Everything got well soaked—books, cameras, clothing, blankets, etc. It was no use trying to dry clothes, as they would get thoroughly soaked on the next watch on deck, while oilers were just as wet inside as out, due to the constant soaking.

This race marks the sixth annual race to Bermuda for power boats, the first one being held in 1907, two boats taking part, Ailsa Craig and Idaho, the former winning in the fast time of 65 hours 45 minutes. The next year, in 1908, two boats also participated, Ailsa Craig, owned by James Craig, Jr., of the New Rochelle Yacht Club, and Irene II, a little 40-footer, owned by S. W. Granbery. Ailsa Craig was again the winner in 66 hours 32 minutes and 30 seconds. Nineteen hundred and nine saw the biggest fleet that has yet participated in the event—Insep, Heather, Neredies II and Ilys. Heather won the race in 80 hours 58 minutes, rather a slow trip, but considered good under the weather conditions that were encountered. The following year, 1910, again saw two entries. This was the year of the Havana race and interest seemed to center in the longer event. Eronel, owned by Samuel Cochran, won from Yo Ho in the elapsed time of 87 hours 29 minutes, while Yo Ho took 94 hours to make the trip.

In 1911 there was no race owing to lack of entries, and in 1912 the Yachtsmen's Club of Philadelphia secured the classic, and after a great deal of hard work they got two boats to the line. Unusually stormy weather was encountered and Dream, owned by Commodore Lagen, won in 105 hours 19 minutes elapsed time, while the time of W. C. Smith's Kathemma, which boat had been hove-to for 19 hours on the trip, was approximately 126 hours, the slowest race on record. Dream also won the return race. The races undoubtedly have done a great deal for the development of power boats and have brought about a more seaworthy and capable type of craft and engines that will run under the most adverse conditions.

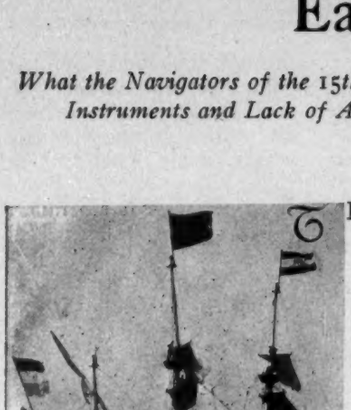


DREAM (AT RIGHT) PASSING A SCHOONER SOON AFTER THE START. A STUDY IN COMPARATIVE SIZES

Early Methods of Navigation

What the Navigators of the 15th and 16th Centuries Had to Contend With in Finding Their Way Across Unknown Seas. Crude Instruments and Lack of Accurate Means of Keeping Time Added to the Difficulties and Dangers of a Long Voyage.

By R. H. GWYNNE



THE extreme accuracy with which a modern steamship is kept on a course of many days' or weeks' duration and, as recent occurrences have disclosed, the remarkable facility with which a ship may turn in its tracks and proceed to the assistance of another vessel at some distant part of the ocean, suggests a comparison with the methods employed by the pioneer navigators, who in the fifteenth and sixteenth centuries undertook to open up the Atlantic Ocean to travel.

The degree of perfection attained by modern methods of navigation is something which did not mature over night, and is an accomplishment of no mean order. At the present time it is hard to picture the ordeal of even a seventeenth century voyage, with all its privations and manifold perils. It is still harder—in fact, quite impossible—to get a good perspective of the conditions confronting Columbus when he determined, in 1492, to set forth in a little, unseaworthy caravel on an absolutely unknown sea to discover what there was to be discovered; on a sea, moreover, filled with all sorts of legendary perils—dragons, goblins and what-not—which must have been demoralizing to the ordinary mortal and quite disconcerting to anyone. But however that may be, it is of interest to inquire into the methods and means wherewith ships were guided across a trackless ocean to a destination beyond; for it is one thing to possess the courage necessary to sail off on the ocean and quite another to know how to get somewhere.

To dwell on the sea-going qualities and capabilities of the early craft would not be to the purpose; and, furthermore, a really correct estimate of their behavior in a seaway is not to be had, as so little is known concerning them. In the light of modern naval architecture, however, they were, in form, irretrievably bad. Yet although they were comparatively small vessels—Santa Maria being about 90 feet in length—smallness does not imply unseaworthiness.

In 1893 a replica of Santa Maria was built in Spain and sailed to this country on its own bottom for exhibition at the Chicago Exposition. It was constructed in all essential details from original data which had been discovered in the Cadiz dockyard. Commander E. H. Currey, R. N., who chanced to see the vessel lying at anchor before her voyage across, remarked that, great as his respect had always been for Columbus, it was immeasurably enhanced when he saw this thing, "like half a man's tall-hat case, in which he sailed out into the unknown." Captain Concas, who sailed the replica across, records that it pitched badly; while Captain W. H. Parker, U. S. N., writes: "While all other seamen of the known world were creeping along the shore, he heroically sailed forth on the broad ocean. * * * When I look back upon my own voyages and recall the many anxious moments I have passed when looking for a port at night, and when I compare my own situation, supplied with accurate charts, perfect instruments, good sailing directions—everything, in short, that science can supply—and then think of Columbus in his little bark, his only instruments an imperfect compass and a rude astrolabe, *sailing forth upon an unknown sea,* I must award to him the credit of being the boldest seaman that ever sailed the salt ocean." It is only a person who is familiar with the ways of the sea who can fully appreciate such a momentous undertaking; and these estimates made by naval men say all that need be said. The resource and courage of the man who could conceive and carry out such a plan must have been tremendous. That the crew were anxious to heave him overboard and go back home is very easy to understand, as is also the fact that they didn't do it.

So much for the ship. What now was the state of nautical science at the inception of off-shore navigation in 1492 by which seamen were enabled to shape a course across a few thousand miles of open sea? The problems of navigation are two—the determination of direction and of position.

The origin of the mariner's compass is shrouded in mystery. It is said to have been used by the Chinese as long ago as 2600 B. C.; but be that as it may, the fact remains that it is not known to have been used by European navigators prior to the year 1300 A. D., and certainly was not in common use till about 1410. To mariners this instrument has been indispensable. Prior to its introduction ships rarely, if ever, ventured out of sight of land, and maritime discoveries were few.

From very remote times man's sense of direction on the earth has been gauged by the bearing of the pole star—the one star in the heavens that appeared to remain motionless, or nearly so; likewise, the mean bearing of the rising and setting sun gave a direction at right angles to this point. These marks form the basis of geographical location; and while serving well enough as guides on land, they could be used by seamen only as a last resort—the star was not in sight by day and might be obscured at night. Something more was essential. The property of the compass needle of pointing at the north star rendered it an infallible guide both by day and by night, and is the one thing which made off-shore voyages possible. The helplessness of the mariner without it is well illustrated by a statement of Asa Frode, the ancient Norwegian historian, who, writing on the discovery of Iceland, says that a renowned Viking, about to set sail on a voyage of discovery in the year 868, took with him three ravens to serve as guides, for the reason that at that time northern seamen did not possess the *leiderstein* (guiding stone).

Invaluable as the compass is, however, without some additional guide voyages of many weeks' duration would involve great inaccuracies, and transoceanic navigation would have remained an uncertain and hazardous undertaking. In the actual navigation of a sailing ship to-day dead reckoning is a rather difficult and more or less uncertain process, even for short distances. It involves calculations for elapsed time, rate of speed, allowance for leeway (a sailing vessel does not travel in the direction of its compass course, but slightly to one side or the other, depending on which side is the wind), and allowance for variation and deviation of the compass, variation being caused by the fact that the magnetic pole does not coincide with the geographical pole, while deviation is a comparatively modern error confined to iron ships, the iron causing a local deflection of the needle. Also, an allowance must be made for tidal and other currents.

Dead reckoning, however, to-day and dead reckoning in the fifteenth century are two different things. Clocks that would keep time on shipboard were not invented till about 1530, and were not used by mariners till very many years later. Time was kept by the sand-glass, and when a sailor forgot to turn the glass after it had run out, time was not kept at all. Speed was measured by heaving overboard from the bow a block of wood and estimating by nautical instinct its time in passing—a performance which was styled the "Dutchman's log," and which was accurate or inaccurate according to the skill and intuitive knowledge possessed by the skipper. Variation was not known. Columbus on his first voyage observed that the needle was not pointing true, and this discovery almost caused a riot among the crew. And when it is remembered that a sailing vessel rarely sails on one course for any length of time, but is forever tacking and altering

courses with unfavorable winds, thus involving a multitude of courses and distances to keep track of, it becomes evident that the reckoning was quite as apt to be wrong as right. Considering, also, that the charts then in use were grossly inaccurate, it will be perceived that it was eternal vigilance more than anything else that kept ships straight. And so if it had not been for some method by which distance (as well as direction) could be determined from the celestial bodies, thus enabling the mariner to check up his dead reckoning, it is doubtful whether ocean navigation would have progressed very far. If, then, after sailing for several days a skipper was enabled to determine his latitude from observation, he was in a fair way to get where he wanted.

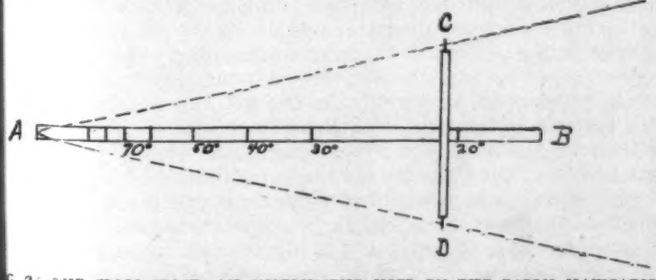
The Greek astronomer Ptolemy (140 A. D.) was able to observe the sun and pole star for latitude and thus determine angular distance in a northerly and southerly direction. And as this knowledge is the heritage of the sailor and is simple in theory, it is worth while to outline it.

The aids to navigation in the fifteenth century were, first the mariner's compass; second, cross-staff and astrolabe for measuring altitude of sun and stars; third, the almanac, containing astronomical tables of the sun's declination for each day in the year and tables for correction to the altitude of the pole star; fourth, charts of the ocean. Columbus actually possessed a chart of the Atlantic; but it is unnecessary to consider it, as it was wholly an illusion.

Nothing had been added to the research of the Greek astronomers throughout the Middle Ages since the time of Ptolemy; but during the period of the Renaissance in Europe all this ancient learning had been brought to light again, so that the educated mariner of the fifteenth century had come to regard the earth as a sphere, and not flat. The sun and heavens were conceived as revolving daily around a fixed earth (the heliocentric theory of Copernicus not being made known till 1543). The sun's independent annular motion in the ecliptic had long been observed and tabulated, the tables of declination giving its latitude for each day in the year.

Premising that the earth's equator is the great circle half-way between the poles, and that it is marked on the celestial sphere by the mean daily course of the sun (that is, by the great circle midway between the solstices); and, further, that the north pole on the celestial sphere is closely marked by the pole star, observe how simple a feat it is to compute latitude.

For example, if the sun revolved daily about the earth directly above its equator (meaning its apparent revolution caused by the earth's rotation), it is very easy to comprehend how it could be made to serve as a "landmark" for the off-shore navigator. For the purpose of illustration assume this to be the case; what information could the mariner obtain from the sun by an observation of its altitude at noon—i. e., when it is crossing the north and south line (meridian) on which he is? In this situation he would be aware that it is 90 degrees of a circle from the sea horizon to his zenith, or 180 degrees (half a circle) from horizon to horizon; therefore, if the altitude of the sun at noon (i. e., when on the observer's meridian) proves to be 90 degrees from his horizon, it must be in his zenith, and he, forsooth, is on the earth's equator, or in latitude 0°, latitude being the angular measurement at the earth's center measured north and south from the equator. Again,



G. 2.—THE CROSS-STAFF, AN INSTRUMENT USED BY THE EARLY NAVIGATORS FOR MEASURING THE SUN'S ALTITUDE

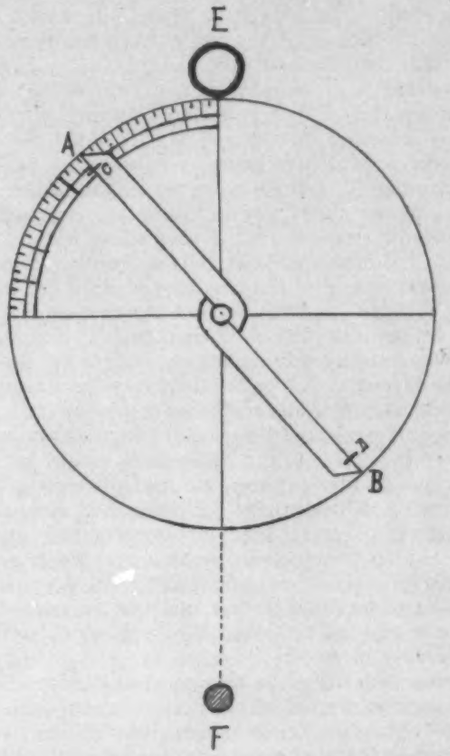


FIG. 1.—THE ASTROLABE, ONE OF THE VERY EARLIEST INSTRUMENTS USED FOR OBTAINING THE SUN'S ZENITH DISTANCE. AS THE ANGLE WAS MEASURED FROM THE PLUMB LINE RATHER THAN FROM THE HORIZON, IT WAS DIFFICULT TO USE ON A VESSEL AT SEA, THE CROSS-STAFF USUALLY HAVING THE PREFERENCE

if the altitude of the sun proved to be 0° (i. e., on the horizon), his latitude must be 90° at the pole. The information of importance, however, in these observations is not the altitude itself, but the angular distance of the body from his zenith, which, of course, is found by subtracting the observed altitude from 90°, this giving the zenith distance, or latitude.

In the fifteenth century the astronomers had not only calculated tables of declination for each day of the year, but also tables for the correction of the altitude of the pole star for all hours of the night, so that, in addition to the method by sun's meridian altitude, mariners could get their latitude by an altitude of the pole star at any hour. Measuring the angle from the pole is simply the reverse of measuring it from the equator, and, of course, there is no declination to allow for.

The instruments used for observing altitudes were comparatively crude; they were two—the astrolabe and the cross-staff. The former was an ancient instrument, and known to Ptolemy. It consisted of a polished circular metal disc about a quarter of an inch thick and seven or eight inches in diameter, with a ring at the edge by which it could be suspended. Two lines at right angles to one another intersected in the center, the direction of one of these coinciding with that of a plumb line under the point of suspension; the upper left-hand quadrant was divided at the edge into degrees. The pointer, *A B*, Fig. 1, worked round a pivot at the center, and was so constructed that the line joining the centers of the two round holes *C* and *D*, or sights, projecting from either end of the pointer passed through the center of the disc. The observer, holding the suspending ring in his left hand, looked through the lower sight, moving the pointer until the object whose altitude was required was seen through the upper sight, the angle from the zenith being read off on the upper left-hand quadrant. By this instrument it was possible to obtain the zenith distance direct, instead of altitude, as the angle was measured from the plumb line rather than the horizon; and it is this fact that

made its use difficult on a pitching vessel. In rough weather the cross-staff which measured the angle from the horizon line was more practicable than the astrolabe.

The cross-staff was equally simple, consisting merely of a straight wooden rod, *A B*, Fig. 2, about an inch square and three feet long, on which a shorter rod *C D*, termed the transversal, could slide, the rods always being at right angles to one another. At the extremities, *C* and *D*, were two small plates with round holes bored through them, and in taking an observation, such as an altitude of the sun, the end *A* was placed close to the observer's eye and *A B* directed about midway between the sun and the horizon, the transversal *C D* being moved until the sun was seen through the hole at *C* and the horizon at the same instant through the hole at *D;* the altitude was then read off on *A B*, which had been previously graduated by laying the instrument over a table on which angles at every degree from 0 to 90 had been ruled; for small altitudes, a short transversal was employed.

The cross-staff could not be used for high altitudes, as will be seen by observing the cut; the cross-piece would be too close to the observer's eye to render accurate measurement possible. To-day, in observing altitudes, the navigator has recourse to tables which correct the observed altitude for refraction and dip of the sea horizon. These corrections were not made in earlier years, the correction for dip not being formulated till 1635; and although refraction was understood by the ancients, no tables for its correction were computed till about the year 1600, and even these were considerably in error.

Commencing with the great voyage of discovery in 1492, ocean navigation has been carried on with consummate skill. Occasionally we read of a ship being several hundred miles out of her course, but such was the exception and not the rule. Columbus, on the first voyage back from the New World, made a good landfall at the Azores and knew precisely where he was, showing clearly with what skill his reckoning must have been kept, both going and coming. This was the first time in the history of ocean navigation that a ship had sailed across many hundreds of miles of open sea; and the fact that such good work was done speaks well for the skill of the great pioneer. On the first voyage out Columbus had a very much distorted notion of the farther shore, being concerned chiefly with sailing in a westerly direction until land was reached. Having arrived at an island, however, he proceeded to make a rough map of the coast line with the aid of compass and observations for latitude. This done, he placed the island or islands on a longitude with reference to the Old World, estimated wholly from his dead reckoning. Now when he came to shape a course homeward—knowing his own latitude and the latitude of his destination, and having a rough estimate of the difference in longitude—he shaped a course for the latitude of his destination (Palos), but well to the westward of it, and on getting the ship on that parallel steered eastward along it until he came up with his port. It was in this way that he fell in with the Azores, which are close to the parallel of Palos.

On the second return voyage the records disclose more fully his rare skill as a navigator, for it appears that the voyage had been a long and tempestuous one, provisions had given out, and the crew were in despair. One night, however, when things were at their worst, Columbus gave orders to shorten sail and to proceed with caution; and the following morning Cape St. Vincent was sighted ahead. Quite some navigating indeed, with no clocks, no log line, "no nothing"! The Admiral was a past-master at dead reckoning.

The methods and instruments used by Columbus were used by the navigators of the following centuries: Drake, Raleigh, Hudson, the navigators of the Mayflower and others. Davis, the Arctic explorer, devised the back-staff in 1590; and this instrument, which was an improvement on the cross-staff, probably superseded it to some extent, although the astrolabe was evidently the instrument mostly relied on. From all accounts the methods herein described did not materially change until the invention of the sextant and chronometer in 1731 and 1735, respectively, which latter date may be said to be the beginning of modern navigation.

The following extract from the narrative of Frobisher's second voyage to the Arctic, written by George Best, Frobisher's lieutenant, is of considerable interest, and gives an excellent idea of the ways of pioneer seamen. It is an account of the return of the exploring fleet to England in 1577. Latitude was expressed in cipher, so as to keep the course secret: "The fifth of September, the height of the sun being taken, we found ourselves to be in latitude of (cipher) degrees and a half. In this voyage commonly we took the latitude of the place by the height of the sun, because the long day taketh away the light, not only of the polar, but also of all other fixed stars. And here the north star is so much elevated above the horizon that, with the staff, it is hardly to be well observed, and the degrees in the astrolabe are too small to observe minutes. Therefore, we always used the staff and the sun as fittest instruments for this use.

"Having spent four or five days in traverse of the seas with contrary wind, making our souther way good as near as we could, to raise our degrees to bring ourselves with the latitude of Scilly, we took the height the tenth of September, and found ourselves in the latitude of (cipher) degrees and ten minutes. The 11th of September, about six a-clock at night, the wind came good southwest; we veered sheet and set our course southeast. And upon Thursday, the 12th of September, taking the height, we were in the latitude of (cipher) degrees and a-half, and reckoned ourselves not passed one hundred and fifty leagues short of Scilly; the weather fair, the wind large at west southwest, we kept our course southeast.

"The 13 day, the height being taken, we found ourselves to be in the latitude of (cipher) degrees, the wind west-south-west, then being in the height of Scilly, and we kept our course east to run in with the Sleeve (the English Channel) or channel so-called, being our narrow seas, and reckoned us short of Scilly twelve leagues.

"Sunday, the 15 of September, about four of the clock, we began to sound with our lead, and had ground at 61 fathom depth, white, small sandy ground, and reckoned us upon the back of Scilly, and set our course east and by north, east-north-east and northeast among.

"The 16 of September, about eight of the clock in the morning sounding, we had sixty-five fathom, oozy sand, and thought ourselves thwart of St. George's Channel, a little within the banks. And bearing a small sail all night, we made many soundings, which were about forty fathom, and so shallow that we could not well tell where we were.

"The 17 of September, we sounded, and had forty fathoms and were not far off the Land's End, finding branded sand with small worms and cockleshells and were shot between Scilly and the Land's End; and being within the bay, we were not able to double the point with a south-and-by-east way, but were fain to make another board (tack), the wind being at southwest and by west, and yet could not double the point to come clear of the Land's End, to bear along the Channel; and the weather cleared up when we were hard aboard the shore, and we made the Land's End perfect, and so put up along St. George's Channel."

About the time of this voyage another method of estimating speed had been adopted, by which a log was attached to a small line and then dropped astern, at which moment the seaman would commence the recitation of certain prescribed sentences, which were repeated twice if the ship were moving slowly, at the end of which it was noted how much the line had run out and the speed then entered in the log. There does not seem to be any record of how long this method was in vogue, or what the prescribed sentence was; but for accuracy there might have been better. In 1635, however, the practical method suggested by Richard Norwood, of marking the line with knots proportionate to the half-minute glass, was adopted, and is in use even at the present day. The distance between the knots on the line bear the same relation to the half-minute glass as does the sea-mile to the hour.

In navigating ships in the vicinity of land the seaman has always greatly relied on the lead line for safety. To-day a ship may be navigated along the coast in a fog by soundings alone, so accurately are the depths recorded on the coast charts; in fact, the lead line to-day is indispensable to the coaster. It will be observed from the foregoing extract to what extent soundings aided in keeping the vessel in deep water. But even so, the loss of ships and lives on the unfamiliar coasts must have been enormous. The reader of history hears only of the successful voyages; history does not record the losses. The following extract from the voyage of Sir Humphrey Gilbert is suggestive of this. The account is of the return of the fleet to England from Newfoundland in 1583—from the narrative of Edward Hayes, captain and owner of the Golden Hind:

"Thursday the 29 of August the wind rose and blew vehemently at south and by east, bringing withal rain and thick mist, so that we could not see a cable length before us; and betimes in the morning we were altogether run and folded in amongst flats and sands, amongst which we found shoal and deep in every three or four ship's length, after we began to sound; but first we were upon them unawares, until Master Cox looking out, discerned in his judgment, white cliffs, crying Land! withal; though we could not afterward descry any land, it being very likely the breaking of the sea white, which seemed to be white cliffs, through the haze and thick weather.

"Immediately tokens were given unto the Delight to cast about to seaward, which being the greater ship, and of burthen 120 tons, was yet foremost upon the breach, keeping so ill watch, that they knew not the danger, before they felt the same, too late to recover; for presently the Admiral struck aground, and had soon after her stern and hinder part beaten in pieces; whereupon the rest (that is to say the frigate, in which was the General, and the Golden Hind) cast about east-south-east, bearing to the south, even for our lives, into the wind's eye, because that way carried us to seaward. Making out from this danger, we sounded one while seven fathom, then five fathom, then four fathom and less, again deeper, immediately four fathom, then but three fathom, the sea going mightily and high. At last we recovered, God be thanked, in some despair to sea room enough.

"In this distress we had vigilant eye unto the Admiral, whom we saw cast away, without power to give the men succor; neither could we espy any of the men that leaped overboard to save themselves, either in the same pinnace, or cock, or upon rafters, and such like means presenting themselves to men in those extremities, for we desired to save the men by every possible means. But all in vain, sith God had determined their ruin; yet all that day, and part of the next, we beat up and down as near unto the wrack as was possible for us, looking out if by good hap we might espy any of them.

"This was a heavy and grievous event, to lose at one blow our chief ship freighted with great provision, gathered together with much travail, care, long time, and difficulty; but more was the loss of our men, which perished to the number almost of a hundred souls."

Other accounts tell the same story, but there were some few ships that left no account at all, and from which it may be gathered that pioneering is a dangerous, albeit interesting, occupation. In these days of charted coasts, life-saving stations, etc., there are any number of vessels beached each winter; the casualties annually, from all causes, average a thousand vessels totally lost; and the wonder is that the early explorers ever accomplished what they did.

The great voyage of discovery in 1492 gave impetus to the study of nautical art and attracted large numbers of men to this calling; and in the course of the next two centuries great advance was made and schools of navigation were established. Chart making was placed on a sound footing by the invention of Mercator in 1569. Prior to this time charts had been the bane of navigators and were grossly inaccurate. To the navigator (or anyone else) direction is reckoned from the meridian. Sailing in a given direction simply means that the given course is preserved with reference to all meridians crossed. On a globe, then, the course becomes a curved line—an abomination to seamen, and most impracticable for use. Now if a chart can be constructed on which the meridians are parallel, it becomes evident that a course laid down thereon will be a straight line instead of a curve. But to gain this object unity of distance must be sacrificed. Mercator's projection consists in keeping the meridians parallel, but augmenting the length of parallels of latitude in receding from the equator in such a manner that the just proportions of the meridians and parallels of latitude to each other are preserved; but distance becomes a variable quantity, increasing as the latitude increases, and must be allowed for.

Although Mercator devised this theory of chart making, it remained for Edward Wright, an Englishman, in 1599, to construct charts scientifically, and to illustrate the principle graphically by the projection of the spherical earth on a cylinder. Owing to the increasing variation of distance with latitude, this chart was not capable, at first, of giving very accurate results; but after the computation of the traverse tables in 1625 and the introduction of the methods of middle-latitude and Mercator's sailings in 1628 work with the chart was rendered for all practical purposes accurate—as accurate as any plane chart can be made. By these methods the course is first reduced to its trigonometrical elements by the tables and then applied to the chart in a way that allows for the distortion of distance.

It will be observed that up to this point the navigator has been unable to fix his position by observation. He has had to be content with latitude alone, the other co-ordinate necessary to fix position—longitude—being an unknown quantity.

Longitude observations on land in the seventeenth century were anything but accurate, owing to the dearth of knowledge. The position of the sun in right ascension was much less accurately known than its declination. A method of determining longitude at sea by observation remained impracticable till just prior to the invention of the chronometer, at which time the method known as "lunars" was used with more or less success; for to fix one's longitude it was necessary to know both the time when the sun crossed a given prime meridian and when it crossed the ship's meridian. This latter was always available, but the former was not, owing to the want of a sufficiently accurate timepiece. Lunars were used for a short time, but were impracticable. The invention of the chronometer by Harrison in 1735 finally solved the problem of longitude. The shipmaster was from that time able to fix his position by observation alone, and dead reckoning, while indispensable, became of secondary importance.

Improved methods have been devised from time to time until it has come about that at the present day all the astronomical and mathematical data in the heavens and elsewhere that is of any use to mariners has been digested into the form of some two-score navigation tables. These tables, together with the nautical almanac for the current year, contain the fundamentals of the science of navigation, and, all told, form rather a formidable and alarming array of figures. The tables supply much of the information necessary for working out and correcting the various altitude sights, and for figuring dead reckoning. As an example of the mass of information thus rendered readily accessible, the table of amplitudes gives the true bearing of the rising and setting sun for all latitudes except the polar regions, and the voluminous azimuth tables give the sun's true bearing for every four minutes throughout the day for all latitudes up to 60 degrees.

Although modern navigation may be said to date from the invention of the chronometer in 1735, it is readily understood that the cost of such a luxury long remained prohibitive to many shipmasters; and as it was not every skipper that could work a longitude sight by lunar distances, it would be expected that the old method of parallel sailing held on for some years to come. There is on record the account of a voyage from England to Rio Janeiro as late as the year 1845 where the skipper is described as steering his vessel by compass to the southward and westward, more or less, until his meridian altitude gave him the latitude of Rio, and then, as the account says, away she went for Rio due west along that parallel, not knowing, however, whether she would "raise" land within an hour or six weeks.

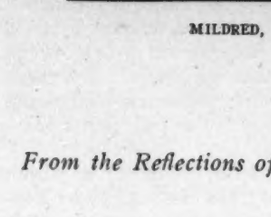
MILDRED, MY LAST LOVE, ON THE BEACH

CULINARY PRACTICE FOR THE BRIDE

Running for Harbor

From the Reflections of Thirteen Pleasant Years Afloat, with a Vivid Memory of Several Trying Flights for Harbor in an Able 25-foot Motor Boat.

By D. A. WASSON



"SOAKING IT" TO LORNA

BREATHES there the yachtsman with soul so dead that he does not regard as one of the chief thrills of the glorious sport that of running for harbor? If such there breathe, go, mark him well; he does not deserve the name. This sort of yachtsman probably does run for harbor — runs if the sun slips behind a cloud, and gets a craven kind of pleasure out of it. That isn't the kind of running for harbor I mean.

Let us say that you have had a smashing day's run down the coast, while port after port and head after head flitted by in a dim, blue panorama; that the wind has hauled out to the southeast and breezed up towards night instead of flattening out, as any respectable summer southerly should; that the sickly sun has begun to edge toward a gathering and sinister bank in the sou-west; that the coasters have begun to wallow towards a "hole in the beach" with sheets off and main peaks settled away. Then you may hard-up your own helm and race for shelter, with apologies to nobody. Even the wheeling gulls will scream discordant approval.

Then what jubilation as you scud, arrow-like, flush with the boiling crests, then slump, forsaken, in a foam-streaked trough till another friendly surge boosts you, and you roar along again; what defiant exhilaration as you cock your eye expertly skyward and figure that it will be neck-and-neck between you and Neptune till you get your mud-hook down!

With what deliberation you pick out a good berth among the anchored vessels in the harbor, conscious that many captious eyes are upon you; with what a sense of satisfaction and security you round-to and let go your best bower with plenty of cable; how you scurry to get all shipshape, that you may criticise the seamanship of the next arrival! What snug enjoyment there is in the evening below as the rain pelts the deck and the halyards hum and thrum the mast in the spiteful gusts!

My yachting experience to date consists of eight summers on my father's 28-foot sloop and four seasons in my own 25-foot power cruiser, both on the coast, and one year with a friend's 36-foot knockabout in fresh water—none of them pretentious commands surely, yet productive of all the joys of big craft. I figure that I am two-thirds windjammer and the rest knight of the oil-can.

My power yachtlet Mildred was my last love, and the shippiest thing of her size that ever wrestled a sea, if I do say it, as shouldn't. She is framed with white oak, planked with white pine, and copper-riveted through and through. Lack of power was all that prevented her purchase by the United States Life Saving Station last year for use as a shore tender at Appledore station, ten miles off Portsmouth, N. H., her home port. She has only a 6 horsepower, double-cylinder Hartford, but it drives her better than seven miles an hour; and as "comfort, first," is our watchword, everybody is satisfied. She houses two comfortably, and houses three—well, who cares, on the water?

Speaking of running for harbor. We were at Marblehead in Mildred, and, in spite of a very low barometer, had to get home that night, for an office loomed in the background of the morrow. That's the kind of running for harbor to conjure with—the kind when you "have to get home." A bride—Mildred herself, if you must know—was second man; at least, she wore white service of the male persuasion while on board.

At 1 P. M., with a moderate south wind and clear weather, we left Marblehead for the 45-mile run under power and sail, convoyed by Kemah, another home boat which is a satellite on most of our trips. All went merry as a marriage bell till we struck out into 26-mile Ipswich Bay. Then that low glass began to get in its deviltry. Great clouds belched up in all directions, and I stowed the 16-yard leg-o'-mutton. Soon the wind hit from the eastward in a smart puff which looked like a sticker. This meant a lee shore and much disagreeable rolling, so we both hauled up about northeast. In another hour the wind was gone, and we, feeling like a bunch of fools, were floundering along in a mixed-up cross-sea out of sight of all land but the Isles of Shoals.

I had read of things like those that happened next. A black cloud of conventional, funnel-shaped design came towering off the shore from about sou'west, and, with it, a blank white wall whose roar we heard for miles. I got into oilskins in a hurry, and just then Kemah vanished in the smother. The three-master Carrie A. Bucknam, which we had just passed, downed every rag of sail she owned and let go both anchors in heaven knows how much water.

"When the rain's before the wind then your tops'l halyards

KEMAH BOUND DOWN EAST

RAINY DAY SOCIABILITY. MILDRED AND KEMAH

mind," say the shellbacks. The rain struck first, but the wind was a good second, and it was zipping. I tried to bring her head to it, and, holding the helm hard down, crouched in the cockpit to dodge the sizzling volleys of rain which instantly cut my face raw. But with the engine doing its best, she wouldn't begin to look at it, though two years before she had taken but two hours to come in from ten miles offshore in the teeth of a 40-mile nor'-wester. The high-sided little craft rolled down almost on her beam-ends, and, in spite of her three-foot draught, went to leeward, like a crab. She trembled, too, though I had always thought that was merely a story-book effect. The air was full of the most unearthly howling I had ever heard outside of a night-mare, and the sea was smooth—beheaded. Rain and spindrift were one as they smoked past in blinding sheets.

Our 11-foot tender was lashed, bottom-up, across the after cockpit, and held altogether too much wind. My wife crept out of the cabin and, keeping well in the lee, cast off one of the fasts. The boat blew skyward like a puff of steam, but landed, full of water, at the end of the long painter, and we righted up a little. The Kemahs always swore we tried to abandon ship.

Probably it wasn't 15 minutes before it cleared. We had been heading nor'west when it struck, and came out heading south-east, though the helm had been constantly hard-a-starboard. It was nothing more or less than a stray cyclone, and we had been near the center of it, for Kemah, farther inshore, had taken it dead over the stern and scudded homeward like a scared rabbit. When we got in we heard that the wind had cut a clean swath through the summer resort town of Hampton Beach, leveling cottages and trees by the score.

Five summers ago, when Mildred was new, there were four of us Portsmouth boats in Marblehead, and all in a hurry to get home. The wind, however, was dead in our teeth and the weather cloudy. The sloop Valkyr decided to let well enough alone and hung at anchor; but in tandem Kemah and Mildred hooked on to Lorna, my father's boat, before mentioned, and we pulled out at 4 P. M., bound to get to Gloucester at least. Abreast Baker's Island the fog began rolling down past Eastern Point on the wings of a northeaster. Black clouds sagged, ready to spout rain, and the whitecaps under them showed ghostly white. Coasters were running for Salem, and the few yachts in sight had long since picked up skirts and hooped it for home. Still the two tugs, though doing considerable tumbling, waltzed their tow along in great style.

Then my father came forward on Lorna's deck and hung on to the jib stay to shout. They were only words of encouragement, but we thought something was wrong and stopped both engines; and I'm blessed if that hawser didn't tie several kinds of knots around Kemah's wheel.

Clearing it in that rough water was out of the question. Baker's Island was close aboard to leeward, with a long ground swell crinkling white around its foot. It was beginning to get dark, and, with the weather looking as it did, there was many a slip 'twixt us and Marblehead; for, of course, we should stick together. It was up to Mildred; and, to make a long story short, she snaked the whole outfit, including the three dinghies, into Manchester-by-the-Sea. And then came the rain and fog.

The next summer four days of fog in Boothbay had again used up the spare time of our faithful trio, and it was a case of get home quick. But it was rough as a grater outside and the wind fresh from the southward still—not much of a show for Lorna to work to the westward. However, we were tired of lying at anchor, so Kemah and Mildred took Lorna in tow once more. Lorna wasn't a barge by any means. She outsailed her tugs more

(Continued on page 48.)

"WHEN THE COASTERS BEGIN TO WALLOW TOWARDS A HOLE IN THE BEACH"

THE STORY OF CAPTAIN GRUCHY

(Boston, 1740) Told in Rhyme

By FREDERIC HENTZ ADAMS

Drawings by
JACK MANLEY ROSÉ

IT was from the sea at twilight
Unknown Gruchy came,
As the watcher of the midnight,
Struggling into flame,
Vainly threw its rays to lighten
Glooming Allerton
That, an hour past, did brighten
In the setting sun.

Standing at the wheel, a pilot
Rock and shoal defined,
Pointed to a rotting pirate
Dangling in the wind:
"There, old Nix's Mate adorning,
Once a rover wild,
Mutely gives his kind a warning."
Gruchy darkly smiled;

Said, the other's thought divining,
"Let you nothing fear,
I am but a trade-designing,
Humble privateer,
Who doth bear the king's commission
And hath prospered well
To the enemy's perdition.
So—hath goods to sell."

Little either spoke thereafter,
Soft the wind did blow;
Fragrant smoke and quiet laughter
Drifted from below
Where the men, from sea returning,
Hailed some quaint remark,
Puffed until their pipes were burning
Red against the dark:

Wanton men, for storm and battle,
Yielding to the charm
Earthy scent and low of cattle
Bore from islands calm
(Lying dimly, port and starboard,
Shadowy with trees),
Felt them grateful to be harbored
From the restless seas.

Watchful guns on Castle William
In the moonlight shone,
Gruchy's eye dealt swiftly with them,
Then glanced o'er his own:
Backed the topsail at his order,
Splashed the anchor down;
Then the pilot, paid a moidore,
Sailors rowed to town.

Garrulous was he, and meeting
Soon his cronies old,
With the "pirate's money" treating,
Fearsome things he told;
And the tale, for trust or scorning,
Passed from door to door;
So, 'mid stare and scowl, next morning
Gruchy stepped ashore.

Confident in look and bearing,
Neither short nor tall,
Velvet coat and breeches wearing,
Dignified withal;
Twice he turned, while townward going,
Towards the swarthy men
Who, by his command, were rowing
To the ship again.

Then, up King street slowly strolling
Towards the town Exchange
(No white deck beneath him rolling,
Sealegs feeling strange)
Sought he one to whom a letter
In his pocket pressed
By some friend, or, mayhap, debtor,
Boldly was addressed.

And "on 'Change" the merchants walking
Saw the meeting chance,
Made pretense of earnest talking,
Watched the pair askance,
Guessed by what esteemed credential
This strange seaman won
Welcome from an influential
Justice of the town.

Asked, yet learned not from the answer,
They and many more;
Tactfully had Gruchy's sponsor
Smoothed the way ashore,
When the ship from long embargo
One day put to sea,
For the Captain and the cargo—
And the mystery.

Ah, the cargo! Rich and splendid,
Bulging bale on bale!
All the merchant folk attended
Gruchy's auction sale;
Even those who, piqued and jealous,
Whispered "Buccaneer"
Scrupled not; but, doubly zealous,
Bought his "bloody gear."

Silence then for tongues accusing
Seemed the wiser part,
Lest they find it ill excusing
Profit of the art
Whereby Gruchy, man of wonder,
Got their willing gold
For a cargazon of plunder
Brought from seas untold.

Thenceforth rich and unencumbered,
Courteous alway,
Timely came he to be numbered—
So the annals say—
'Mong the folk of best condition,
And with fair renown
Held full many a brave position
Honored of the town.

Famous was his house and stable—
Phips's proud estate;
Famous wines flowed at his table
Royally and late:
Wealth and place and friends all gaining,
Yet, for good or ill,
Even from those friends remaining
Half in shadow still!

Came a night when each was sitting
In his wonted place;
Gruchy rose, a wan smile flitting
O'er his bronzed face,
Spoke in tone of manly grieving:
"Drink I, friends of mine,
To the gallant hearts I'm leaving
This last glass of wine."

Then before a question sought him
From the puzzled throng,
Wittingly, it seemed, he thought him
Of a merry song;
While the others, roused and glowing,
Sang the loud refrain,
Out he passed, but whither going
Years have asked in vain.

Ceased the singing, ceased the drinking,
Waiting his return,
Low the snuffy candles sinking
Fitfully did burn;
Then the feasters left the table,
Searched they through the Hall,
O'er the grounds and in the stable
Loudly did they call.

Nothing save his guarded warning
Gave them hint or clue,
And the widening light of morning
Brought no trace to view;
Yet inquiry long attended
All the countryside
Ere the faithful search was ended
Or its zeal had died.

In the meantime, long-diverted
Rumors had their will
With the silent and deserted
Mansion on the hill,
Whisp'ring of a secret stairway
From the cellarage
Whence was gained a tunneled fairway
To the harbor's edge

Where deep-laden boats, at midnight
Rowed with muffled oar,
Came when skies were black and moonlight
Lay not on the shore;
And a prowler, near remaining,
Once the smothered sound
Heard of workers, cursed and straining
Far within the ground;

While a fisherman, returning
Ere the break of day,
Noticed signal-lanterns burning
High above the bay,
And, an hour after landing,
Looking easterly,
Saw a rakish vessel standing
Under press to sea.

So the vulgar gossips blindly
For his secret strove,
Which tradition, heeding kindly,
Still insists was love,
Yet in proof can offer only
This romantic tale
That a seaman, crazed and lonely,
Boasted o'er his ale:

Smuggler or buccaneer?
Gruchy his rightful name?
Wherefore he settled here,
Wherefrom he came?
Ask if ye will, and I
Who knew him best, perchance,
First to the last reply—
He came of France.

How he was nobly named
Booteth it not to tell;
That which his deeds have famed
Serveth as well.
Mayhap he chose to seek
Venture and lordly gain
Where glutted galleons creak
Homeward to Spain.

What if his law of might
Held them to full duress,
Setting the seas alight;
Drake did no less.
And if a Don was gored
All for a lady's care,
'Twas by a nobler sword.
Christ! she was fair:

Never on earth again,
Never, on land or sea,
Shall for the eyes of men
Such beauty be!
Proudly he wooed and won.
No more the fight and foam—
All the old days were done,
Rummage and roam.

Cloistered on yonder hill,
Guarded from prying eyes,
True to his wayward will
Kept he his prize.
There, sirs, was luxury!
Hangings from ancient looms,
Rugs of rare artistry,
Furnished those rooms.

Sometimes she sang to him
Songs she had learned afar,
Then her eyes seemed to him
As fires are;
Leaped in his veins the blood,
Leaped in his heart the wave;
Chiding his restless mood,
She called him brave.

So lived they year by year,
Keeping their secret well,
Saw not the sorrow near
Whose shadow fell.
Sleeping within those arms,
Strongly her shield of old,
Woke she with strange alarms,
Trembling and cold.

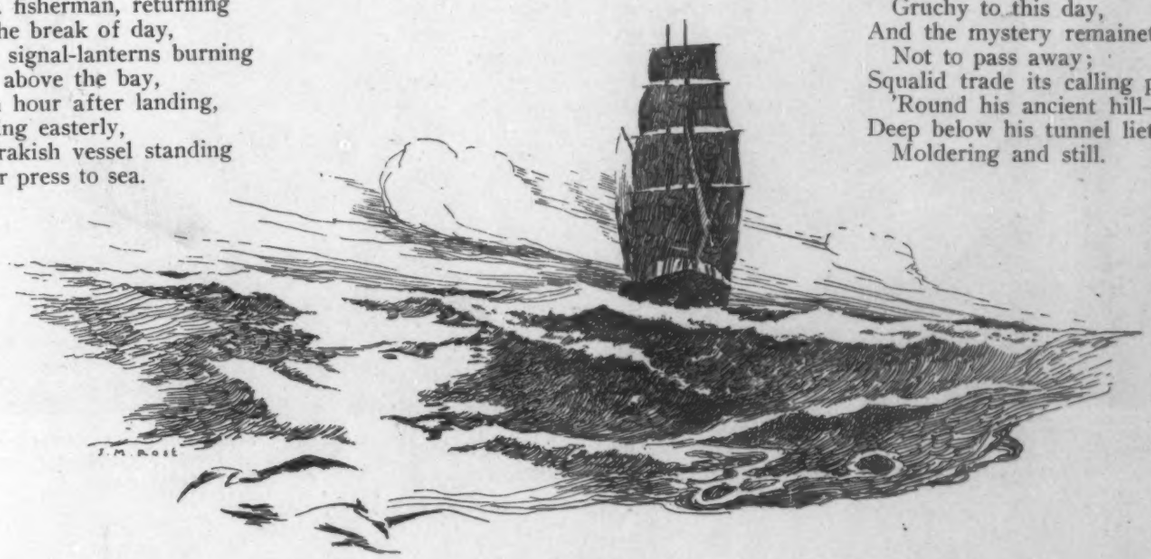
"Take me, my love," she cried,
Back 'neath the sunny sky.
Haste, love, lest ill betide,
Haste, or I die!"
Fear smote him to the core;
So well he worked that day
Night saw his muffled oar
Cut the dark bay.

There lay the gallant ship,
Once Gruchy's only pride,
Anchor all hove atrip,
Black on the tide.
"Bear us, my faithful one,
Far from this Northern gloom;
Cheered in her native sun,
Bright shall she bloom."

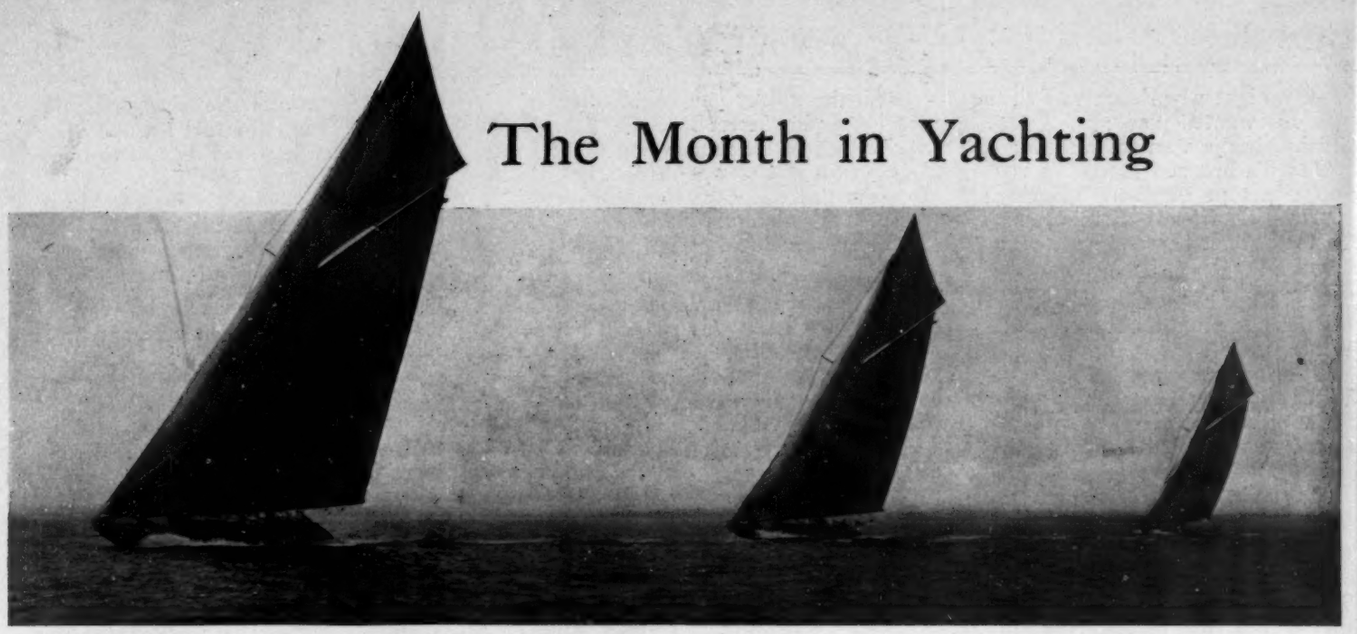
Bravely we bowled along,
Warm grew the breeze at last,
Then would she burst in song—
Singing, she passed.
Long did the Captain stand
That night, the helmsman saith,
Pressing her tawny hand,
Lovely in death:

Then from a sudden stroke
Staggered, and stiffly stood,
Fell, and his sword blade broke
Red with his blood.
Dying, left one behest:
"Lash that loved form to me—
So shall we, breast to breast,
Wander the sea!"

Boston's history containeth
Gruchy to this day,
And the mystery remaineth
Not to pass away;
Squalid trade its calling plieth
'Round his ancient hill—
Deep below his tunnel lieth,
Moldering and still.



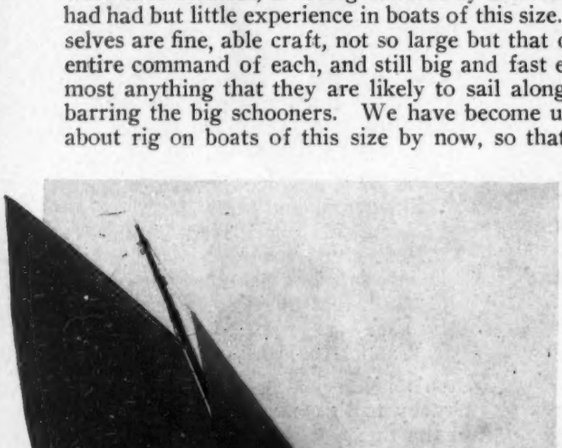
The Month in Yachting



THE NEW ONE-DESIGN "50'S" FINISHING AT THE SEAWANHAKA-CORINTHIAN REGATTA. ACUSHLA, GRAYLING AND BARBARA IN THE ORDER OF FINISHING

WHAT THE NEW " 50'S " HAVE DONE.

THE yachting season began in earnest on Memorial Day, May 30th, with the first regattas of the various yacht racing associations along the Atlantic coast. So many new boats have come out this year that the interest in the first races was keen and everyone was anxious to know just what the new craft and new classes would do. Possibly, the new 50-foot one-design class of the New York Yacht Club attracted the greatest amount of attention owing to the size of the boats and the fact that there were nine of them, all being handled by amateurs, some of whom had had but little experience in boats of this size. The boats themselves are fine, able craft, not so large but that one man can be in entire command of each, and still big and fast enough to hold almost anything that they are likely to sail alongside of this year, barring the big schooners. We have become used to the knockabout rig on boats of this size by now, so that it does not look strange to us, and with club topsails aloft the sail plan of the new boats is very pleasing. The hull looks somewhat narrow and lean with hollow sections forward and a long drawnout, graceful forward overhang, and the only drawback as to looks is the short, chopped-off stern, giving them rather a bob-tailed appearance.



OLYMPIAN, THE NEW GARDNER CLASS P BOAT OF THE CHICAGO SYNDICATE FOR THE DEFENSE OF THE MANHASSET CUP

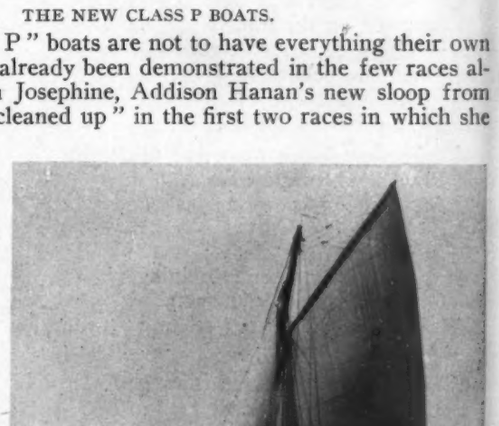
So far none of the boats or skippers seems to have had anything on the others, the winners in the four races already sailed being: Iroquois II sailed by R. N. Ellis; Acushla, G. M. Heckscher; Barbara, H. P. Whitney, and Ventura, G. F. Baker, Jr. Barbara seems to have been handled very consistently and has been well placed in all of the races.

As was predicted in an earlier issue, there has been some lively scrapping at the starting line of the various races, and during the Seawanhaka-Corinthian races several of the boats came together in their eagerness to be the first over the line. A skipper has to keep his wits about him in handling a boat of this size with nine of them racing in the class.

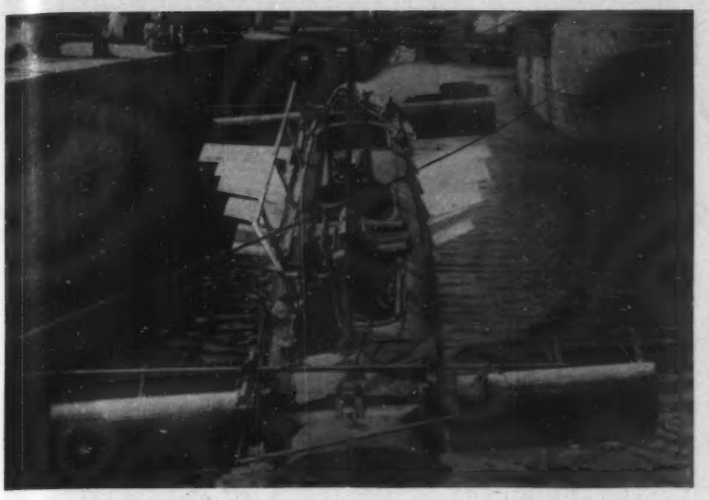
THE NEW CLASS P BOATS.

That the older " P " boats are not to have everything their own way this year has already been demonstrated in the few races already sailed, when Josephine, Addison Hanan's new sloop from his own design, " cleaned up " in the first two races in which she took part, beating Joyant, Corinthian, Windward, and the new Chicago Syndicate boat, Olympian, the latter having been built for the defense of the Manhasset Bay Cup by Chicago yachtsmen.

The western boat, which is from the board of Wm. Gardner, gave a good account of herself and is undoubtedly a very fast boat. With the fleet of Class P boats that the Chicago yachtsmen are getting together on Lake Michigan, she will have plenty of opportunity la-



JOSEPHINE, ADDISON HANAN'S NEW CLASS P BOAT, HAS BEEN VERY SUCCESSFUL IN HER EARLY RACES



FORLANINI HYDROPLANE, SHOWING THE FOUR GRADUATED SETS OF PLANES AND THE BOAT AT FULL SPEED WITH THE HULL LIFTED CLEAR OF THE WATER. IT IS SAID SHE HAS ATTAINED A SPEED OF ABOUT 50 MILES PER HOUR

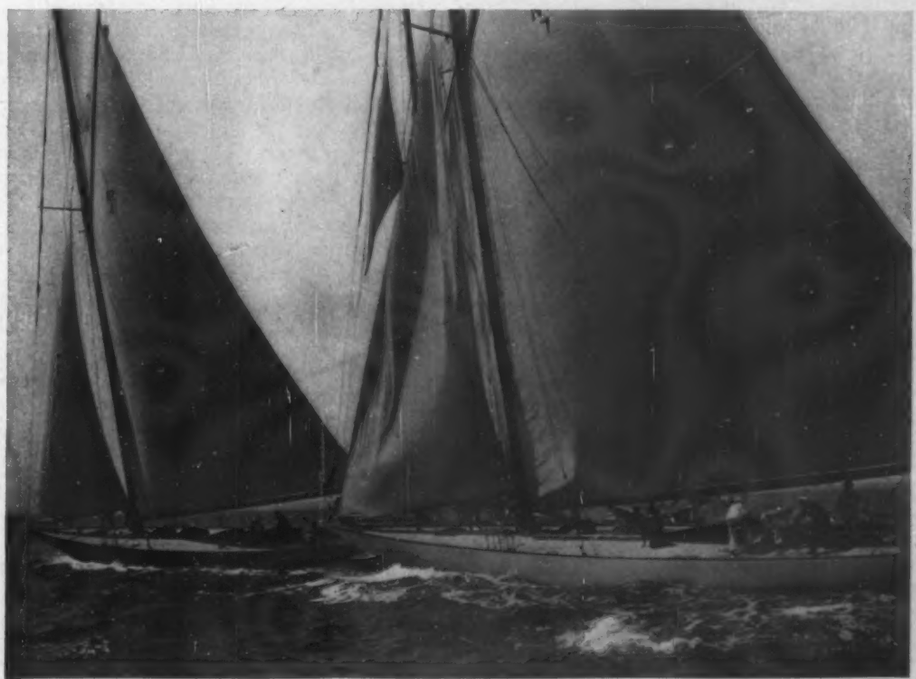
ter to show what she can do against Michicago, last year's boat, Mavourneen, and the South Shore, an Owen designed boat of this year. It is also understood that the new Hanan boat will be sent out as one of the team to try to recapture the Cup. The Hanan boat certainly looks like a flyer, with long somewhat flat overhangs and what appears like less displacement than the other boats. She must be a flyer if she can defeat Corinthian by over four minutes and Joyant by eight, as she did.

THE BRITISH INTERNATIONAL TEAM TRIALS.

As the time approaches for the holding of the trial races to select a team to go to England after the B. I. Trophy, which was taken from us so handily last year by Maple Leaf IV, but very little definite news is heard concerning the American boats. The date selected by the Motor Boat Club of America for the trial races are July 7th, 8th and 9th, over the Huntington course, which is one of the best in the East and which is accurately surveyed and marked.

Several boats have been built for this event and Com. J. Stuart Blackton will have at least one craft at the line, the product of the Smith-Ryan Company of Algonac, Michigan, builders of his last year's fleet of Baby Reliances. There is also the Ankle Deep, owned by Count Mankowski, which came so near keeping the cup in this country last year but for—(but what's the use of post mortems) and which has been improved this year so that it is said she has made several miles an hour better, or close to 50 miles. Aple, of Atlantic City, designer of the famous Sandburr, Teck, Jr., and other speedy monoplanes, is said to have two hulls, one for Julius Fleischman and one for Com. T. C. Dupont that will surely be starters, while Mr. A. E. Smith and A. G. Miles, the latter the owner of P. D. Q. II, winner of the Gold Challenge Cup last year, will both have boats. It is also understood that Mr. H. H. Timken, the last owner of Kitty Hawk, the famous Western boat, will have a new 26-footer on hand. None of these boats have made public trials at this writing, so but little can be said of them. I predict, however, that they must not only be fast, but must be able to hold top speed for 30 miles whenever called upon, and must be able to negotiate rough water if they are to bring the cup back.

Speaking about the latest in high speed boats on this side, makes me call attention to the two photographs on this page of the Forlanini hydroplane mentioned by Mr. Clinton H. Crane in a recent article in YACHTING on the hydroplane of the future, and with which experimental tests have been carried out in Europe in the last eighteen months or so. In this craft four graduated sets of planes support the boat when at speed, the hull being lifted entirely clear of the water, though the propeller, of course, works in the water and not in the air. A speed in excess of 50 miles an hour has been claimed for this boat and one of the pictures shows her running at high speed in a sea that would bother considerably the average hydroplane supported at one or two points of the hull. It will be interesting to watch the further development of this type. We are indebted to Mr. T. R. Goodwin for the photographs.



VENTURA, GRAYLING AND SAMURAI, THREE OF THE NEW 50'S, GETTING THEIR FIRST BUMP OF THE SEASON IN A FOUL AT THE LINE AT THE SEWANHAKA REGATTA

Don't forget the Race Week of the Narragansett Bay Y. R. Ass'n, Aug. 7 to 13. Yachtsmen should help, by their presence, to make it the best regatta ever held on the Bay.

An Old Sailor's Yarns

Being the Reminiscences of an Old Sea Salt on a Long Life at Sea

By CAPT. R. F. COFFIN

First Yarn. A Whaling Voyage in the South Seas

"DID you ever eat rat, sir? No, I suppose not; and I don't mean for to say they are as good as birds; but if you was hard up, and couldn't get no birds nor nothin', you'd find rats was perticlerly good scoff."

Thus much the old sailor, by way of introduction; and he thus continued:

"I told you about my bein' picked up by that there whale-ship, and of my shippin' into her for to go the v'yage. Well, 'tain't no wonder, sir, that whalers is such good-for-nothin' trash aboard a merchant ship, 'cause their v'yages is so long that if a chap know'd anythin' afore he started he'd forgit it all afore he got back; and no matter how smart he was to begin with he'd git lazy afore the v'yage was ended, and I won't deny that I did myself, neither.

"You see, for almost the whole time from the start they have fine weather. They may git a little blow a-goin' off the coast, though that ain't likely, as they don't generally start until there's a good promise of fine weather for a day or two, and by that time they are out across the Gulf, and from there down to the line is all plain sailin' and fine weather. Three or four days' calm in the Horse latitudes, perhaps, which gives 'em time for to practice the crews—which are almost all green hands—to the boats, and then they strike the trades, and away they go, scarcely touchin' a brace or a bit of runnin' gear except for to sweat it. Well, then, they have the doldrums 'twixt the trades, and if they weather St. Roque, which they almost always do, these whalers, 'cause they go well to the east'ard afore strikin' the trades, so if so be as they may take a whale a-goin' off they may put in to Fayal and send their ile home and git a good outfit of greens for to begin the v'yage with. Sometimes, too, they put in to the Cape De Verdes, but mostly to Fayal; or, as these whalers call it, the Isle de Dabney, 'cause ever since the world was created the American Consul into that place has been named Dabney, and has kind of been the king pin there, ownin' pretty nearly all the water front, and bein' Consul and ship-chandler and merchant all combined together; leastwise that was so when I was there, which is a many years ago. And he'd buy the ile from these whale ships and send it home to Boston in an old brig, what he had called the Harbinger; or he'd ship their ile on freight, and he'd sell 'em vegetables or whatever else they wanted, and always had a keg of real French brandy for to give the skipper when he went to sea, as, he'd tell 'em, formed part of the cargo of a brig from Bordeaux to Boston as came in there in distress in his great-grandfather's time, when he was Consul, and had to be condemned and the cargo sold for the benefit of whom it might consarn; and his great-grandfather bought ten casks of this brandy, which was then twenty-five years old, and this here keg was a part of it, he'd tell the skipper. But old Manuel, his major-domo, as they called him, used to allow that this here was all a yarn, and that the brandy was made over onto the Island of Pico, right opposite to Fayal, where old Dabney had extensive vineyards. But, bless you, sir, these here whalin' skippers from New Bedford and Nantucket didn't know no better than for to take it all in, and the grog done 'em as much good as if the yarn of old Dabney's great-grandfather had all been true as this here I'm a-tellin' you on. It sent the skippers away good-natured, anyhow, with the addition of a big basket of oranges, and made 'em look more pleasantly on old Dabney's bills, which I've heerd 'em say was rayther steep.

"Well, there you are; arter gittin' across the line and into the southeast trades then there was another spell of bright, fine weather as a man would wish for to see, and away they went rap full till they got through 'em and into the heavy weather of the South Atlantic. Then, in course, I don't say but what they might have some pretty bad weather till arter they had passed the Horn, but what of it? They wasn't a-makin' a passage with ships of other lines a-racin' with 'em; they wasn't a-hopin' for to hear the newsboys a-cryin' out, 'Here's the arrival of the So-and-So with two days' later news from Europe;' not a bit of it, and so, bless you, they jist took things easy. When they was about a-comin' up with the River 'Plate,' where they was likely for to git a Pomparo, they'd jist send down their t'gallan'-masts, and there they was snug, and in anythin' that was at all like a blow with the big crews they carried they could down and reef all three topsails to once, and most ginerally did it in the daytime, too. No goin' aloft in dark nights aboard of them ships, I can tell you; they know'd a trick worth two or three of that. Well, then, on the other side, when they got onto whalin' ground they was under snug canvas all the time; and so, you see, if a man didn't git lazy under sich circumstances he ought to have been ashamed of hisself.

"Mind you, I'm speakin' of the whalin' of many years ago, when ships went arter sparm whales in the Pacific, and long afore they got so scarce there that they had to go to the Arctic arter right whales. I don't know nothin' about that business, 'cause I never went there; only from what I hear tell there ain't much laziness about that trade; but in my time whalin' was a fine-weather business, and sometimes for months together there wouldn't be a whale seen, and so 'twasn't any wonder if the chaps got a'most too lazy for to wash themselves.

"Well, sir, this here ship what I was in, she stuck along to the eastward arter pickin' me up, but didn't stop nowhere, and we never see no whales till we got on to the coast of Brazil. The old man he took a fancy to me, 'cause he seen right off I was a good sailor-man and right handy with an oar, and so he made me his boat-steerer in place of a chap what had shipped boat-steerer and had been took sick; and the old man he showed me how I was for to do to strike a whale, and he was very feared that I might be galleyed or skeered when first I come to one. But I told him he needn't be afeer'd of me, and that all he had for to do was to put me nigh enough and I'd put the irons into him. You see, sir, the chap what's called the boat-steerer don't steer the boat till arter the whale is struck. He pulls the bow oar and the captain of the boat steers; but when they pulls up onto the whale for to kill him, then the captain he comes forward with the lance and the boat-steerer takes the steerin' oar.

"Whalin' chaps may be lazy enough most times, but they wake up when they're arter a whale, I can tell you, and I reckon it's jist about the greatest sport that there is. Our old man seemed as if he'd jist go crazy when he got down arter a whale. You ought to hear the way he'd talk to us chaps in the boat for to make us pull.

"He'd begin quite easy, like. 'Now, my lads,' he'd say, 'now, my beauties, make her talk; give 'way, my hearties; only pull, I'll give you all the terbacker in the ship; I'll give you my house to home; bend your backs and stretch your breeches; pull—you; you ain't pullin' a pound; pull, or I'll break your heads; that's my loves; that's my beauties; there she walks; thar he blows, only three lengths off; one more good stroke and we have him; pull, blast you, pull, and don't let that other boat beat you;' and so the old fellow would go on, coaxin' us one minute, and then cursin' us up hill and down the next; now tellin' us we was all his brothers, and then swearin' he'd never put his foot in a boat with one of us ag'in; but, bless you, he didn't know what he was sayin', and we didn't mind it, 'cause we was a-pullin', of course, as hard as we could, and we couldn't do no more.

"I won't say I wasn't a trifle flurried the first whale I struck,

'cause it wouldn't be true; but there wasn't much time to be skeered. The old man he sings out, 'Peak the bow! Stand up!' and I shoved my oar in the cleet and jumped up and grabbed my iron. There was the whale, a-layin' quite still on the water about a boat's length ahead of me, and in a second or two the stem of the boat was right on to him. It was a splendid chance, and I hove the one iron into him, and grabbing the other as quick as lightnin' I gave him that one too, jist as the old man sung out, 'Starn all!'

"Well, when he come up arter soundin' we pulled up onto him, and the old man lanced him, and we soon had him spoutin' blood. The mate and second mate was jist as lucky as we was, and we had three whales alongside at one time, which made us all good-humored, 'cause it was a good beginnin' of the v'yage. We cruised about on the Brazil banks for about six months, and then went 'round into the Pacific. We had tolerable good luck for the first year, and were gittin' very anxious for to go in somewhere to recruit, and the old man he told us that arter we had took another whale he'd go to Honolulu and refit. Of course, under sich circumstances it was an awful long time afore we did see any whales, and we was jist on the p'int of givin' up and goin' in, anyhow, when one arternoon, about four bells in the dog-watch, the masthead sung out, 'Thar she blows! thar she breaches!'

"'Whar away?' says the old man.

"'Two p'ints on the lee bow,' says the masthead.

"'Keep her a p'int off and round in the topsail yards a bit,' says the old man, 'and stand by for to lower.'

"It weren't long afore we made 'em from the deck—a large school of whales, a-puffin' and a-blowin' in all directions. We ran till within about half a mile of 'em, and then lowered. Bein' to windward of 'em, we was able to use the sails in the boats, which is the best way of gettin' on to a whale, 'cause you don't skeer him with the oars. Git right to windward of him, and then sail right down on top of and right over him as he sounds, givin' him the two irons as you go; and that was the way we done then. As the boat shot over him I let him have both irons, and down he went. We thought he never was goin' to stop soundin', and that we should lose our line. We snubbed him all we could, and carried the boat's nose clean down to the level of the water, with all the crew chock aft, but still he went down. All the other boats had fastened, and, of course, they couldn't give us any line. At last, jist as we only had one fake left in the tub, he begin to come up, and we commenced to haul in. He come up about a hundred yards from the boat, and took a look round, scared like, and then he made a bee-line dead to windward. Well, we made all fast and let him run, and I don't think I was ever behind a fish that went so fast afore. The boat run clean out of the water for more'n half her length, like what you'll see when a small boat is a-towin' astarn of a steamboat. The water piled up on both sides a couple of feet above the gunwales of the boat, and was all of a white foam. I don't think I'd be a-stretchin' of it if I said that that fish run us at the rate of ten or fifteen miles an hour.

"Well, we thought he'd stop runnin' arter a bit, and so we jist hung on to him; but hour arter hour went on, and he didn't seem any more tired than when he started. It was just dusk when we struck him, and, of course, we soon lost sight of the ship's lights: but that we didn't mind, 'cause we always carried a couple of days' provisions and water in the boat, and were frequently away for twenty-four hours.

"The day was jist breakin' when the critter begin to be tired out, and arter slackenin' up his pace gradually he at last became stock-still. We wasn't long haulin' up on to him, and the old man soon sent him into his flurry with the lance, and we backed off out of his way and waited to see him die. In about ten minutes he turned up his flukes and lay on the water a dead whale, and then, to our great disgust, down he sunk.

"You know, sir, they will do that sometimes, and then we lose 'em, 'cause the boat can't support their great weight, and so we have to cut and let 'em go; and so 'twas in this case; arter all our trouble and bein' towed about 150 miles from the ship, all our work went for nothin', and we lost our fish. Bein' a seafarin' man for many years, of course I've heard a deal of swearin'; but I never heard any swearin' equal to that old man when he see that whale sink.

"Well, sir, the whale bein' lost, there wasn't any use a-cryin' over it, and all we had for to do was to git back aboard of the ship as soon as possible. There was a nice little breeze, and we set the sail and run down afore the wind. We had beef and pork and bread in the boat, as well as water, and arter breakfast all hands except me laid down and went to sleep. I steered her till noon, and then, arter dinner, the old man relieved me, and I got a nap. We didn't go over five miles an hour, and so at dark we hadn't gone much over sixty miles, and were still nearly a hundred miles from the ship. We know'd if the other boats had killed their fish that all hands would be busy cuttin' in, and they wouldn't bother to look for us; so all we had to do was to keep on a-runnin' afore it and we'd pick her up by the next mornin'.

"We missed the ship somehow. Arter runnin' till noon of the next day and seein' nothin' of her, the old man made up his mind that we had run by her; that she was a-workin' up to windward to look for us, and had reached so far over our track as to be out of our sight when we passed her. 'So,' says he, ''tain't no use to run off any further, and 'tain't no use pullin' back to windward, and the best thing we can do is jist to lay still and she'll cruise about till she finds us.'

"Well, we laid still for twenty-four hours longer, and then our grub was very near all used up, and things was a-lookin' bad for us; so we set the sail and concluded we'd reach back and forth on a wind, and we done so; reachin' along about southeast till six o'clock, when, jist as we was a-goin' round, one of the chaps who had stood up for to git a good look, sings out, 'Land ho!' Up we all jumped in a jiffy, and there, sure enough, about two points on the lee bow, was a small island.

"'There ain't nothin' of the kind hereaway on the charts,' says the old man; 'but, anyhow, we'll edge down toward it, and at daylight to-morrow mornin' we'll git round to leeward of it and make a landin'. 'Twill be better than stoppin' out here, at all events.'

"These here islands, sir, away out into the Pacific is jist as like one another as two peas, and when you have seen one on 'em you've seen 'em all. In course, there's a difference in the size of 'em, but not much. I mean the low coral islands, and not the high, mountainous ones. They are anywhere from one to twelve miles long, and are ginerally very narrow, and a'most always they extends from southeast to nor'west—that is, south of the line in the southeast trades and northeast and southwest in the northeast trades. When you first see one of these islands you'd a'most be fit to swear it was a fleet of vessels at anchor, 'cause you only sees the tops of the trees. Then as you git nearer you see the white, sandy beach and the surf a-breakin' over the reef, which extends all round the island. That's the funniest part of it, sir, that that there reef is always sure to be there, and there never ain't no passage through it, except on the lee side. You might think that as the wind changed sometimes one side would be lee and sometimes the other; but bless you, sir, the wind don't never change out there, or leastwise it don't do it often, and when it does then look out for squalls. My eye! how I've seen it blow out there when what they call the trades was interrupted; but that ain't often, and mostly the wind blows steady and strong from about east-southeast or east-northeast, accordin' as you might be to the north'ard or south'ard of the line. These here islands don't have much growin' onto 'em—jist a little kind of a wiry beach grass and a few cocoanut trees. Sometimes there's fresh water onto 'em, but mostly there ain't any at all—that is, on them that ain't inhabited; and there's plenty of 'em yet scattered all over the ocean that nobody has ever seen, and maybe with folks livin' onto 'em what's been shipwrecked or lost from whalers, like them chaps from the Bounty, that lived for years and years and raised up children and grandchildren afore anybody heern tell on 'em.

"They say these here islands is manufactured by little bits of insects, but that's all a yarn, you know, 'cause I've been there, and

I never see no insects a-manyfacterin', and, of course, I would see 'em if they'd a been there. If they made the island, I suppose they'll tell us that they made the trees on to it, and the birds and the fish and the sharks, and p'raps they'll say they made the reef outside of the island, too. They might as well tell a tough one while they was about it. It is really astonishin', sir, to think of the way people would be bamboozled if it weren't for us sailormen, as goes to these places and then brings home the truth about 'em. And that's what you can depend on in these here yarns; whatever else they may be, they're all true, and no mistake. Talk about little insects a-makin' them islands! Why, to show you how ridiculous that there is, the reefs come right up out of deep water. Why, at a ship's length from the reef you'll have ninety fathoms of water, and when ships want to anchor there they have to run their jibboom right over the breakers afore they lets go.

"I mind a funny thing happened in the Californy times to a ship as touched at Honolulu on the way across to Calcutta. The captain of her he was a young chap as hadn't never been around there afore, and he got frightened at the looks of the surf a-breakin' onto the reef, and didn't let her shoot up far enough afore he sung out for to let go the anchor. Well, whether it ever touched bottom or not I don't know, but it didn't bring her up, and she got starnway onto her, and off she went. Well, then, he lets go the other anchor, and runs out the whole ninety fathoms onto each cable; but bless you, I suppose there was three hundred fathoms under her by this time. The old native pilot had come aboard with his Kanakas to help get the ship through the reef, and so they turned-to for to heave up the anchors. But you see, sir, it's no joke when you have the weight of ninety fathoms of chain besides the anchor, and so arter heavin' a while they broke the windlass purchase. You see, it was one of these patent windlasses without ends, and so it was good for nothin' arter the purchase was broke. Well, then they got out their purchase-blocks, and rove off tackles, and clapped on to the chain luff upon luff, and the fall to the capsen; and arter gittin' a few fathoms of the chain the blocks all broke to pieces with the strain and they was jammed ag'in.

"The ship all this while was a-driftin' off shore, and the night was a-comin' on, and the native pilot he got frightened and wanted for to slip the chains and let the anchors go. But the skipper of that there ship, he wasn't a-goin' for to lose his anchors, and so he wouldn't do no sich a thing; and so the pilot took one look at the island a fast fadin' away into the distance and, callin' his Kanakas, he got into his boat and away he went for the shore. The old man, he sent a note ashore by him to the American Consul, if so be as how he couldn't send him some assistance. Well, there was a French man-of-war there at that time, and as soon as the captain of her heerd of it, he sends two boats out to her assistance, and they carried out a set of big blocks what they used to put masts in, and they turned to with them when they got aboard and rove off heavy tackles and went at the anchors, one at a time. It was slow work, you may be sure, and it took 'em twelve hours steady heavin' afore they got the anchors to the hawse. Then they went to work and put the canvas onto her, and beat her up, and the French 'midshipman he piloted her in.

"Now, you see no insects could ever build them reefs in sich deep water as that, I know; but there's lots of people to this day that believes they do. In course, they ain't sailors, and so don't know much. Do you suppose that a insect what had never been to sea would a-known enough to have left the openin' through the reef jist to leeward of the island so that ships could make a harbor? Stands to reason he couldn't any more'n he could make the men and women what you'll find onto some of 'em—reg'lar fine specimens, and no mistake; but, then, there's a reason for that, 'cause they kills off all the unlikely children, and as for the old men, there ain't any of them, 'cause when a man begins for to grow old he jist makes a grand party, and he tells his friends that he reckons he ain't any more good in this world, and they'd better put him out of it as soon as possible, and so his oldest son or else his nighest relation knocks him on the head, and there's an end of him.

"You wouldn't think they had grog on these here islands, would you? But they have, though, for all that. 'Tain't like the whiskey or gin or brandy we have here, but it'll make drunk come as quick as any chain-locker poison I ever drank, and the way they make it is the funniest part of it. If you'll believe me, sir, the way they do it is to git some of the young women for to chew up a root they have there, called the ava root, and then spit it out into a bowl, same as we would into a spittoon with our 'bacca juice, and then they jist pours water onto this and let it stand a little while, and then they strains it through a sieve of leaves; and there you are—a grog that will make your eyes snap about as quick as anything you can scare up.

"But I sot out for to tell you of our coming athwart that there island that time when we missed our ship, and here I've been a-yarnin' about all the islands into the Pacific. This here island what we saw when we was into the boat our old man said wasn't down onto his chart, and he'd made the position of the ship that arternoon afore we'd left her to be about 16 degrees south and 145 degrees west. Well, we laid by all night, and at daylight we set our sail and run down to leeward of it; and there we found the water smooth on the reef, although there wasn't any openin' through it, as there is most ginerally. Hows'ever, we didn't have no trouble in crossin' it and makin' a landin' onto the beach. It appeared to be a little bit of an island, not more than a mile across and nearly round in its form, and with plenty of cocoanut trees onto it. What we wanted jist then more than anythin' else was somethin' for to drink. We hadn't had no water for nearly twenty-four hours. You may jist imagine, then, how glad we was when one of the party by the name of Tom Bunker—he belonged to Nantucket—sung out, 'Here's a spring!'

"You see, sir, there was six of us, all told, and the old man had made us separate as far apart as we could and yet be within hail, and so go across the island for to survey it like and try for to find wood and water afore we got to the grove of cocoanut trees, which was away about the center of the island. At Tom's hail, hows'ever, we all come to at once and ranged up to him; and sure enough here was a little spring of beautiful clear water. If you want to know what first-class tipple is, you must try spring water arter you're been in a boat twenty-four hours without any. Tom told us that afore he come up with the spring he seen the whole ground alive with some kind of creepin' animal, but what they was he couldn't tell. Well, we didn't hyst that in exactly, but we thought that maybe Tom, bein' so long on the water without anythin' for to drink, had made him kind of loony, and so he had imagined he seen animals when he hadn't. 'What's funny about this here island,' says the old man, 'is that there ain't no birds onto it. I've landed on plenty of islands afore which didn't have no natives onto 'em, and there was always thousands of birds; and here, except some gulls a-flyin over the reef, we ain't seen a bird.'

"'Talking about inhabitants,' says one of the chaps just then, 'what do you call that thing yonder?' We looked where he p'inted, and there, sure enough, was a native. He appeared for to be kind of frightened at us, and kept at a respectful distance, and as we advanced he retreated. So the old man he says, 'You stay here, my lads, and I'll go for'ard alone, and then maybe it won't be so much afeer'd.' So we sits down and the old man he goes on ahead, puttin' his hands onto his breast and a-makin' all sorts of motions, for to show that he didn't mean no harm; and finally the savage seemed to understand, and stopped still for to let our old man come up. But it seemed, as he told us arterward, when he got within about hailin' distance, all of a sudden the native, as we had took it to be, runned toward him, and with a kind of a yell like jist tumbled down all into a bunch at his feet. Well, we heer'd the yell the critter gave, and we rushed up to where the old man was, and if I ever see a man flabbergasted completely it was that old man.

"'Boys,' says he, 'that ain't no native, it's a woman, and a white woman at that; and however on 'arth she got here beats me entirely.'

"Well, she soon comed around to herself, and if ever you see

a critter delighted for to see anybody that there critter was delighted for to see us. And the first words she said when she come to was: 'It ain't no dream; you are real? Thank God, I am saved!'

"'Well, as to that, marm,' says our old man, 'of course, we'll do anythin' for you that is in our power; but whether you be saved or not there's different opinions about, but there ain't no doubt of the fact that we are lost. You see, marm, we went arter a whale and lost him, and missed our ship, which is somewhere around here at this blessed minit, marm, for my mate, Jabez Robinson, if so be as how he got on board all right, won't leave this here locality not for six months without findin' us; and if so be as my ship comes along this way and you want for to be took off, all I can say is that my cabin is at your sarvice; and now, marm, as we're complete strangers onto this here island, and are perticlerly hungry, if you could direct us to any place where we can find somethin' for to eat I'll be extremely obliged to you.'

"The yarn she spun us arter we'd had somethin' to eat and had a nap and been made comfortable was that she come to that island in the bark Sarah Louisa, of Nantucket, of which her husband, Jedediah Starbuck, was the skipper; that she left Nantucket above seven years afore we fell in with her, and when she was about two years out the bark fetched up onto this reef one night. She didn't know much about how it come about, whether the craft was under way or jist hove-to a-driftin'; but I suppose it's likely the latter, and that all hands was asleep, jist as they usually is in whalers in the night-time, and so she fetched up on this reef without no way onto her, and jist swung round side-on and bilged. Bein' to windward of the reef, she had no show to git off, and probably arter about three thumps she would be hard on and full of water. That's about the English of it, though, of course, this here woman didn't know much about it. All she could tell was that she was woke up with a tremendous thump, and that she went on deck with her husband, and found the sea breakin' all over the ship; that her husband put her into the port-quarter boat, which shows that the bark's head was to the north'ard, and that she hadn't no more'n got there afore there came a sea over all, and took her and boat and all away, and the next minit she found herself in the deep water, away inside of the reef, and clear of the breakers altogether.

"Of course, belongin' to Nantucket, she could swim like a fish—babies all swim natural there, same as they do at the Sandwich Islands—and so she struck out jist as anyone would do, and in due time she reached the shore all right. How upon 'arth she escaped the sharks I don't know, for they're jist as thick as flies in summer inside of them reefs; but maybe as she hadn't nothin' onto her but her nightdress the whiteness of that in the water scared Mr. Shark, for he's a mighty skeery fish afore he gits blood; or it might be he was attracted toward the reef by the blood already there from some of the rest of the crew. However it might be, she come ashore all right, and she was the only one of all the lot that done so.

"Well, it weren't very pleasant for her next mornin', when the sun got up, to find herself stranded all alone in that way; but she were a Nantucket gal, and they ain't easily daunted, and then she had been to sea with her husband a whole v'yage afore this last one, and so had got to be somethin' of a sailor, and, of course, could look out for herself a heap sight better than one of these shore gals could, and so she determined for to make the best of it, anyway. She thought that most likely the men folks had got off in the boats, and that in the arternoon they would be landin' onto the lee side of the island; and so she jist stirred herself round for to git some grub and water.

"At that time the whole island was alive with birds, and as tame as could be, and there was eggs jist as many as she wanted; and durin' the day, a-roamin' round, she come to a spring of water, and so she was all right for drink.

"About four o'clock that first arternoon that she was onto the island, as near as she could tell by the sun, the old hulk come ashore. You see, it had beat over the reef and into deep water, and the oil casks what was into it had kept it from sinkin'; and as the beach was bold, the old hulk come within a cable's length afore she grounded; and, as is always the case where a ship goes ashore on a sandy surf beach, as soon as she grounded the sand begins to make up inside of her, and in three days this here woman was able to walk off aboard of her almost dry-footed. That was a good thing for her, 'cause she was able for to git her dunnage, which she needed, havin' nothin' onto her but her nightgownd. Not that it was cold there at all, or that there was anybody for to look at her to see which way she dressed; but still a woman, you know, ain't like a man, and they likes to have their riggin' onto 'em, no matter whether they're alone or not.

"Well, then, there was lots of provisions that weren't much hurt by the salt water. The biscuits in them ships is always packed in tight casks, and so they weren't hurt; the only job was how for to git at 'em, 'cause they was under water at the first; but as the sand kept makin' up around her more and more the water receded, and the casks of biscuits and many other things come into reach. The flour, also, in them ships, and the rice, and, in fact, all articles that are perishable if exposed to the air, are always packed in air-tight barrels, 'cause, you know, they are expected for to keep for years. But, for all that, I've seen biscuit so lively that you had to stick a knife through 'em and pin 'em to the chest or they'd walk off in spite of you; but that was when they'd be a matter of three years old.

"You see, she knew, did this woman, that at any time there might come up a storm or an upheaving of the tidal wave and cover all over the wreck, and so she know'd it was judgment to git a good stock of provisions up as high as she could. You see, she didn't give up, but all along thought that by and by some ship comin' along that way would take her off. Probably plenty did come pretty near; but, you see, these here islands ain't visible more than ten or fifteen miles, and ships ain't so plenty, or weren't then, as to make it likely they'd see it, except by accident; and so there she'd been all that five years all alone by her own self onto that island.

"Well, it was a good job for us, anyway. When we got to her hut she says to our old man: 'Now you and your men set down here behind the house, and I'll go to work for to cook you a breakfast. Of course, I didn't expect company, and so I haven't got none ready at present; but there's plenty here, and I won't be long a-gettin' of it.' Well, she takes a stick that looked somethin' like a boat's tiller and away she went into the grove of cocoanuts, and we seen her a-runnin' back and forth a-strikin' at somethin' on the ground; but whatever it was we didn't know, and, to tell the truth, we didn't care. Fact was, we was pretty well tuckered out, and gittin' where all things was comfortable and a good breakfast promised us, we jist give up and stretched down onto the grass and went to sleep. The old man he sot the example, and I heerd him a-borin' pump-log afore I dropped off.

"I was woke up by one of the finest smells of cookin' I ever smelt, and it fetched me right up onto my feet to onct, and I went along to where the woman had her fire—jist some stones with a fire built onto 'em—and found that what I smelt come from a big sasspan which she had over the fire. 'Wait a few minits,' says she, 'it's a'most done; and if you don't say it's a good stew, then call me a bad cook.' The nice smell had waked up the rest of the chaps by this time, and we was all ready for our meal when she dished it up. Well, sir, I never eat anythin' like that stew in all my born days. I s'pose it was 'cause I was hungry partly, but then it really was extremely nice as she made it, for we had it often after that, when we wasn't so sharp set.

"The woman she looked on quite delighted for to see us eat, and a-fillin' each chap's dish as fast as it was empty; but arter she had helped us all round for the sixth time she said that there weren't no more left, and we'd have for to wait till dinner time. Says she: 'I'll bet you don't any of you know what you've been eatin'.'

"'Well, marm,' said our skipper, 'that ere is jist the question I was a-goin' for to ask you; this here's a powerful good stew, and shows that you're a fust-class cook—but that, of course, you would be, comin' from Nantucket—but I hain't seen no birds

onto the island, and I can't jist judge from the taste what sort of a animal you've made it of.'

" 'Well,' says she, 'that there was a rat stew, and rats is now about the only livin' thing there is upon the island except ourselves, and I begun to think that if they increase much more they'd eat me, as they have everythin' else. You see, when the ship come ashore there was lots of rats aboard of her, and they jist left her by the hundred and took up their quarters on shore, the numerous eggs in the birds' nest provin' a great temptation to them. Well, you all know how fast they breed, and the island now is literally overrun with 'em. There's millions of 'em here now if there's a single rat. After eatin' the eggs they turned to and eat all the young birds they could find, and they either eat the old ones or else they flew away to some other island where they were not so much molested, for there hasn't been a bird here for the past two years. I had been livin' on birds and birds' eggs, and when they began to grow so scarce and the rats so plenty, it struck me I might as well try rat, and I knocked a couple over and skinned 'em, and the flesh looked nice, and I cooked it and found it very good. Since then, so far as meat was concerned, I've lived on rat. But, bless you, where I've eat one, there's a hundred been born, and they're increasin' every day. I've found 'em useful about one thing: they climb up the cocoanut trees and eat off the green cocoanuts so that they fall down, and only in this way could I get any, 'cause, of course, I couldn't climb up arter 'em; but, you see, if this had to go on all the cocoanuts would be gone, and then I don't know what we should do. Hows'ever, now that there's so many of you to feed, we shall use plenty of these critters.'

"Well, sir, 'tain't no use makin' a long story of this here thing; of course, you know the way we lived there with plenty for to eat and drink and nothin' to do all the blessed day long. You might think, sir, that this was all very pleasant, but 'tain't no use, sir; coop a man up on a little island and tell him that he sha'n't go off of it, and you may jist give him all the grub you like, he won't be contented, nohow. We had rat to eat all ways—roast rat, broiled rat, fried rat, rat fricassee, and rat stew—and I can jist tell you what it is, sir, rat ain't bad, especially if you can git a Nantucket woman to cook it for you.

"Well, I think we was there in all twenty-seven days, when one mornin' one of the chaps what was up in a tree lookin' out (we all took our lookouts regular, jist as if we'd been aboard lookin' for whales) sung out, 'Sail ho!' That started the whole of us, you may be sure, and we went to work and fetched pieces of the old wreck to the highest part of the island and made a rousin' big fire, pilin' onto it arter it got a-goin' well a lot of leaves and beach grass for to make a big smoke, and then we watched for to see if the sail what we saw came nearer. By noon there was no doubt about it at all, for we could make out her topsails from the ground, and we kept up our fire, you may well believe, the smoke risin' high in the air above the island. By one o'clock we was sure she had seen our signal, for she was a-headin' right down toward us, and in another hour she had rounded to leeward of the island and lowered away her boat.

"They didn't have for to come across the reef, hows'ever, for we had launched our own boat and put the woman and her dunnage into it and pulled out for to meet 'em. We hadn't exactly been able for to make out whether it was our ship or not, as comin' head-on, as she did, all ships look alike; but as soon as she rounded to and the old man got a look at her he know'd her at once, and you may just believe he was delighted. The poor woman was in a dreadful way when she found she was to be took off, and she laughed and cried all at once. When the chaps in the other boat made out who we was they jist peaked their oars and stood up and give three cheers, and we jist jumped right up and returned it, and that made Mr. Robinson, the mate, know who it was, and he jist called all hands to the gangway for to give us another salute as we come alongside.

"The appearance of the woman in the boat with us was a matter of surprise to the mate; but the old man soon told him who she was and how much she had done for us, and as soon as the boats had been hysted up we squared away to the westward for Tahiti, that bein' the nighest spot where we could go in for to refit and land the woman, where she could be put in charge of an American consul. You see, this island what we had been on was jist to the north'ard of the Paumatu Island, and the Society Islands, that Tahiti belongs to, is away to the south'ard and west-'ard of 'em.

"There ain't much more for to tell; the wind was light, and it took us about a week for to reach Tahiti; and there we put the woman on shore, and the consul took charge of her, and, I suppose, the first chance he got he sent her home. Leastwise I never heerd tell of her arterward. We stayed in port a month and refitted and recruited regularly; but from that day to this I never see a rat that I don't think of them stews that we used to have onto that island; and if ever you're hard up, sir, and can't git nothin' else in the way of meat, you'll find that rat ain't to be sneezed at." (To be continued.)

A Plain Talk on the Compass

Part IV. How to Adjust Your Own Compass, With a Few Incidental Remarks About Magnetism, Dip, Etc.

By ALFRED D'A. McNEVIN

HAVING already taken up the various causes of compass error and their effect on this most important navigating instrument, this article has been written with the intention of treating, in as simple a manner as possible, the apparently complex question of compass adjustment. In this connection I will explain what can be done to counteract these troublesome, disturbing forces, and to make the needle point as nearly to the north magnetic pole as possible.

Let us presume that the boat is now clear of the basin, under way, and that all the necessary preparations for the adjustments have been made, as already described in our previous articles. The danger zone surrounding the binnacle is free of all such movable articles and tools as may cause deflections of the compass. The vessel is on an even keel, and all the working apparatus and gear of every sort is in shipshape order. The pelorus is in its stand, carefully lined up and ready for use; the Azimuth bearings are handy, and the watch has been set for the Apparent Local Time. Proper consideration must also be given the variation of the locality where the operation is going to be made. If the American Azimuth Tables are being used, it is easy to deduce the sun's bearing for every five minutes from the amounts given in the book for an interval of every ten minutes.

If the binnacle of the compass to be adjusted happens to be of the non-compensating type, draw two chalk lines on the deck, one fore-and-aft and the other athwartships, which would extend from the center of the compass through both the fore-and-aft and athwartship lubber line. When setting the magnets, place their centers exactly on these lines and have their ends equidistant from the center of the compass.

Magnetism, for the purpose of this article, may be described as a natural force which acts upon steel and iron in such a way as to influence the workings of any compass needle placed near it. Magnetism flows through a piece or mass of untempered iron as readily as though it occupied no place in space whatever, and

a slight shock of any description will cause it to take up a temporary residence therein. The more violent the shock the longer it stays, so that a part of the magnetism in a ship is permanent and a part is temporary. The temporary part is neutralized by soft iron correctors and the permanent part by magnets having the quality of retaining their magnetic strength indefinitely and unimpaired. Strictly speaking, a magnet is a piece of hardened steel artificially charged with magnetism. Commonly speaking, it is a piece of iron or steel magnetized by induction from the earth. The ends of a magnet are called the poles, each possessing an opposite but equal force. Therefore, if one pole attracts, the other pole always repels the compass needle. The greatest power is near these ends, or poles, and it is neutral in its center, possessing no power in that spot. The magnetism fades out from a point near the ends toward the center of the bar, where it disappears altogether.

Efficient compensating magnets must be made of high-grade steel with three per cent. of tungsten, hardened by heating to redness, then letting them cool off quickly, drawing the temper by heat till they attain a violet straw color. After this they are placed in a helix of insulated copper wire through which a powerful current of electricity is circulated. The magnetic intensity of bar magnets resides chiefly near its surface, and for this reason small magnets are proportionately stronger than large ones.

In order to distinguish the north pole *of the earth* from the *north seeking end of a magnet,* the *latter* is painted *red* and the opposite end *blue.* Often in speaking of the poles of a magnet it is desirable to call them by color, and not by name, so as to avoid a misunderstanding. The north pole of the earth is called blue and always attracts the same end of the compass needle; and since, in obedience to the first law of magnetism, similar poles repel and opposite poles attract, it would sound inconsistent to call both north poles by the same name, and would naturally lead to confusion. What with right and left instead of starboard and port, and the new method of compass readings, we have enough of confusion already in the navigating department of our boats.

Artificial magnets do not vary in strength at different places on the earth; they possess the same directive power at one place as they do at another, and it is this directive power that is of value to the navigator. Unfortunately, in higher latitudes this directive power varies with the "dip" or downward inclination of the needle.

On the Magnetic Equator there is no "dip," and the needle points with all its strength to the north point of the horizon. In north latitudes the north end dips below the horizon and in south latitudes the south end dips below the horizon, and exactly in proportion to the amount of the dip is its horizontal directive power diminished. At the North and South Magnetic Poles the dip is 90°, and the compass is powerless to give direction at these positions. The dip is not shown on a compass card, owing to its being balanced on its pivot above the center of gravity and the conical shape of the pivot and cap compel the card to remain in a horizontal position. Dip must be always kept in mind, however, as it is accountable for the increased sluggishness of the compass as the distance increases north or south of the Equator; and also, in like proportion, the magnetic strength of vertical iron in the boat also changes. Dip affects both the magnetism in the boat by its varying influence on the iron in her construction and equipment and the directive power of the compass needle.

In adjusting a compass two important laws relating to magnetism should be considered. A magnet placed parallel to the needle of a compass card will cause no deflection, because both poles of

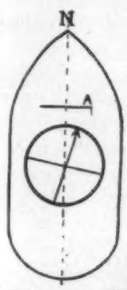


Fig 1.—The dotted line represents the magnetic *N*; *a* represents the red pole of a correcting magnet. The position of the compass needle, with reference to the magnetic meridian, shows how it is attracted to the starboard side of the boat heading north, producing easterly deviation A pull to the same side heading south would produce westerly deviation, as in Fig. 4. A pull to the port side would exactly reverse the name of the deviation on the north and south courses.

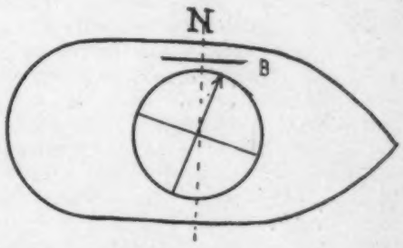


Fig. 2.—Dotted line represents the magnetic *N*; *b* represents the red pole of a magnet. The position of the compass needle, with reference to the magnetic meridian, shows how it is attracted to the bow of the boat heading east, producing easterly deviation. A pull to the bow heading west would produce westerly deviation, as in Fig. 8. A pull to the stern would exactly reverse the name of the deviation on the east and west courses.

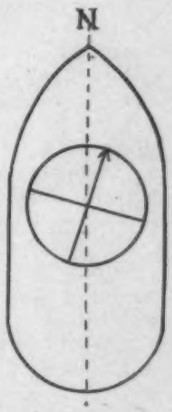


Fig. 3.—Heading north. Easterly deviation. Pull to the starboard side = + *C*.

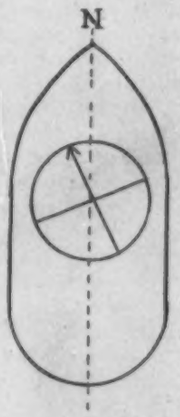


Fig. 5.—Heading north. Westerly deviation. Pull to the port side = — *C*.

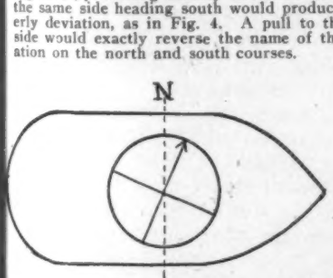


Fig. 7.—Heading east. Easterly deviation. Pull to the bow = + *B*.

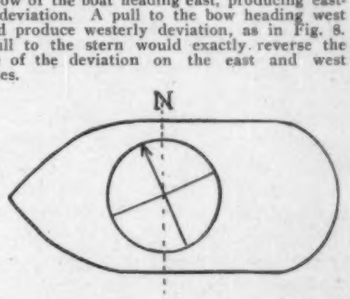


Fig. 8.—Heading west. Westerly deviation. Pull to the bow = + *B*.

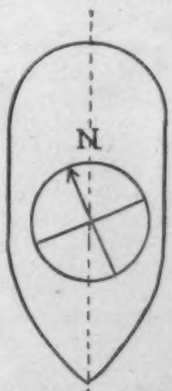


Fig. 4.—Heading south. westerly deviation. Pull to the starboard side = + *C*.

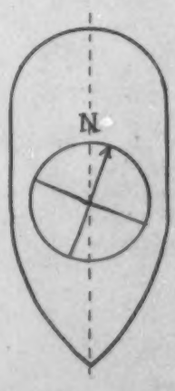


Fig. 6.—Heading south. Easterly deviation. Pull to the port side = — *C*.

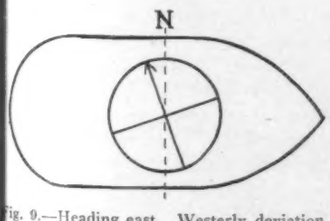


Fig. 9.—Heading east. Westerly deviation. Pull to the stern = — *B*.

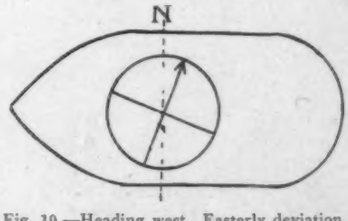


Fig. 10.—Heading west. Easterly deviation. Pull to the stern = — *B*.

the magnet will repel the similar poles of the needles, or both poles of the magnet will attract the opposite poles of the needles.

At right angles to the compass needle the deflection would be one-half of what it would be if placed end on. Thus a magnet end on has twice the power of one broadside on.

In describing an adjustment it should be remembered that the deflections of the compass needle are classified under two headings—viz., the semi-circular and quadrantal deviations.

The semi-circular deviation is caused, in part, by the permanent magnetism in the boat, and is hammered into the hull by the continual sharp taps of the riveters while the vessel is building; the other component of the semi-circular deviation is caused by induced magnetic curents entering the vertical iron parts of the boat and her equipment. If the separate value of these two amounts could be determined without a trip to the equatorial regions the difficulties of an adjustment would be considerably lessened.

We know that vertical iron is non-effective on the magnetic equator, and, consequently, any increase in the semi-circular deviation going north or south from that line, or any wide change of latitude, would naturally be caused by the entrance of magnetism into the vertical soft iron parts of the boat. Once knowing the value of this component of the semi-circular deviation, it could readily be neutralized by an equal force acting in an opposite direction, and, in this way, a separate correction could then be made for each element in the make-up of this disturbance.

The semi-circular deviation is corrected by fore-and-aft and athwartship magnets with sufficient strength to correct the compass on the cardinal points. The *vertical component* is treated with the Flinders corrector while the boat is heading on or near the *east* or *west* point, in cases where this amount is obtainable. In general practice the *full* amount of the semi-circular deviation is treated by permanent magnets, and this remedy is satisfactory unless a wide range of latitude is to be covered in the course of a cruise, in which case the Flinders bar corrector is essential. The Flinders corrector is beneficial in several ways, but in treating the subject locally it is not necessary to discuss it in all its phases.

The quadrantal deviation is caused by induced magnetism in the horizontal, continuous and divided iron or steel beams in the boat or the horizontal parts of her equipment. It is maximum on the inter-cardinal points and minimum on the cardinal points. Globes, cylinders and chain boxes are a remedy for this kind of error. It might be in order to mention that on many boats, especially yachts, the means for correcting this deviation, which in some cases amounts to as much as 11 to 15 degrees, are often omitted in the construction of a compass binnacle, and, consequently, this error is left uncompensated when an adjustment is made except for the small part which the permanent magnets may correct, at the expense of leaving a small error on the cardinal points, thereby robbing Peter to pay Paul. Where Paul's claim is considerable, Peter's loss is noticeably felt. Whatever relief is given to the inter-cardinal courses by aid from the permanent magnets, or cardinal correctors, is procured at the expense of accuracy on the cardinal points. Of course, if the compass is correct on the cardinal points and considerably wide of the mark on the inter-cardinal points, a little asistance can be spared by the permanent correctors in order to assist the quadrantal correctors, thus equalizing deviations on all points of the compass. That is better than having it right on some heading and largely in error on others.

Now, in naming the deviation to be corrected, no matter under which classification it may come, the rule is always the same. It is named East, or plus (+) when the compass north is drawn to the *right* of the magnetic north, and west, or minus (—), when the compass north is drawn to the *left* of the magnetic north.

Another and, perhaps, the most satisfactory manner of designating the direction of the pull on the compass needle, is to signify such by considering to which side or end of the vessel the needle is deflected when she is heading on the adjusting points. These are the cardinal and inter-cardinal directions. Heading north or south, the deflection would be either to the starboard (right) or port (left) side, as in Figs. 1, 3, 4, 5 and 6. Heading east or west, the deflection would be either to the bow or stern, as in Figs. 2, 7, 8, 9 and 10.

These deflections are commonly expressed by letters and sig in compass work, plus (+) *B* indicating a pull to the bow, as i Figs. 2, 7 and 8; minus (—) *B* indicating a pull to the stern, a in Figs. 9 and 10; plus (+) *C* indicating a pull to the starboar side, as in Figs. 1, 3 and 4, and minus (—) *C* indicating a pull the port side, as in Figs. 5 and 6.

For the purpose of making an adjustment it is only necessar to consider the deflections when the vessel is heading in the in mediate vicinity of the cardinal and inter-cardinal points; so fo that reason we have not dwelt on the bow, stern and side pull i naming the deviations on all of the intermediate points of the com pass. That is not necessary.

The letter (a) in Fig. 1 represents the red pole of a magne centered on the extension of a line drawn from the center of th compass through its fore-and-aft lubber points, and at such a di tance as to counteract the deviation affecting the compass on th northerly and southerly courses. The pull is to starboard, so th red pole of the magnet is placed to starboard to force the needl back to its proper position in the meridian. A correction made o northerly courses serves on southerly courses also. The 'thwar ship magnets correct the deviations on *all* northerly and southerl courses, and they continue in effect as the ship's head swings fro north and south to east and west. On the latter points the 'thwar ship magnets are parallel to the compass needles, in which positio they are non-effective.

After adjusting on north, if any error is found on south, "spl the difference" and set another magnet while heading south t remove this difference. The magnet marked (a) in Fig. 1 woul serve the same purpose if placed abaft the compass on the sam line and with its red pole directed to the same side.

If the pull exerted on the compass needle is toward the sta board side, always place the red pole of the correcting magnet o the starboard side of the fore-and-aft line through the compas if the pull exerted on the compass needle is toward the port sid always place the red pole of the magnet to port. The 'thwartshi magnets may be placed either forward or abaft the compass, ta ing every precaution to see that they are properly centered.

The letter (b) in Fig. 2 represents the red pole of a magn centered on the extension of a line drawn from the center of t compass through its 'thwartship lubber points and at such a di tance as to counteract the deviation affecting the compass on t easterly and westerly courses. The pull is to the bow in this ca so the red pole of the magnet is directed toward the bow to for the needle back to its proper position in the meridian. A corre tion made on easterly courses serves to correct the compass o westerly courses also.

The fore-and-aft magnets correct the deviations on *all* easte and westerly headings, and they continue in effect as the shi head swings from east or west toward the north or south. On t latter points the fore-and-aft magnets are parallel to the compa needles, in which position they are non-effective.

If the pull exerted on the compass needle is to the bow, dire the red pole of the correcting magnet toward the bow; if the p exerted on the compass needle is toward the stern, direct the r pole of the correcting magnet toward the stern. The fore-an aft magnets may be placed on either side of the compass, but sure they are properly centered and that their ends are equidist from the center of the compass.

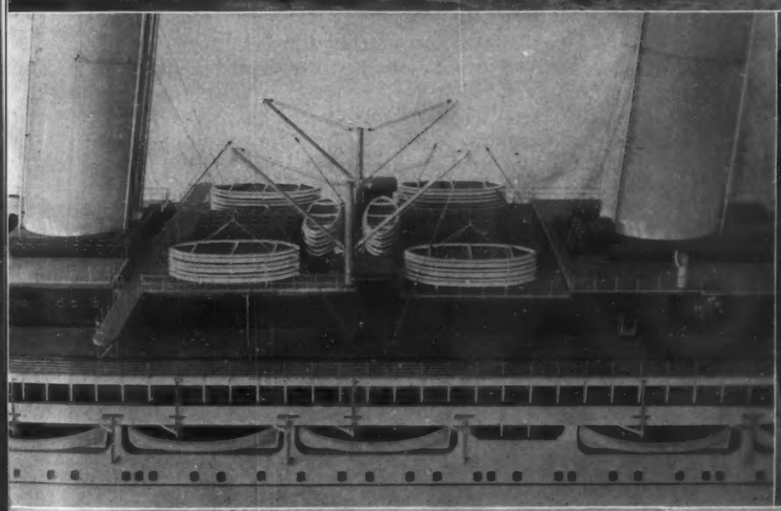
After adjusting on east, if any error is found on west, do as rected for the south adjustment in regard to its difference, a the operation is then complete, in so far as the semi-circular viation is concerned. We have already described in a form issue on what point to set the Flinders corrector.

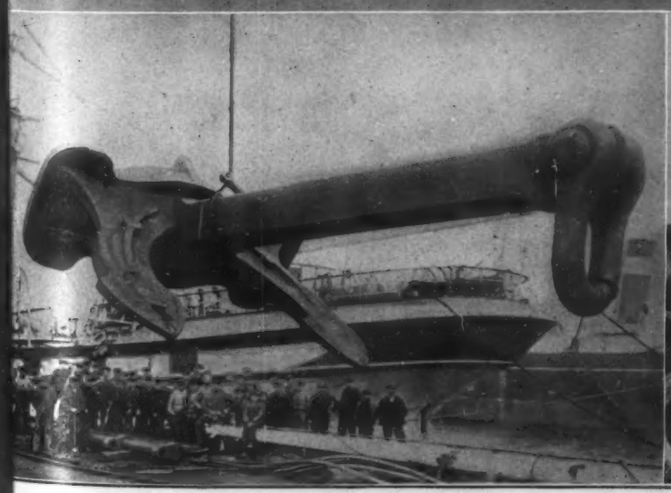
To adjust the compass on the inter-cardinal points, the glob or cylinders must be fastened on their brackets in such a po tion that they will correct the compass on the quadrantal poin They should be fixed exactly 'thwartships on either side of compass at such a height that the card, extended, would cut spheres in halves. They should not be placed nearer than one one-half times the length of the needle from the center of compass. With an efficient modern short needle it would be di cult to infringe this rule. Should the correctors become magn

zed by the needles they are useless, and should be unshipped. The rule for adjusting a compass, briefly stated, is to place the ed (North or Positive pole) of a magnet nearest the same side, r same end, of the boat toward which the needle is drawn; heading north or south, to set the 'thwartship magnets, and east or vest, to set the fore-and-aft magnets.

To set the quadrantal correctors, globes, cylinders or chain boxes; head the boat on any one of the inter-cardinal points and move the globes in or out on their brackets, as the case may require, until the compass points correctly on these courses; if chain boxes are used, measure out the chain until the course is cor-

(Continued on page 48.)





1. THE NEW HAMBURG-AMERICAN LINER IMPERATOR, THE LARGEST SHIP IN THE WORLD. 2. BOAT DECKS, SHOWING COLLAPSIBLE AND REGULAR LIFEBOATS AND METHOD OF LAUNCHING. 3. COMPARTMENT BETWEEN INNER AND OUTER SKINS OF VESSEL. 4 AND 5. "SOME" ANCHOR AND CABLE

How the Skipper of the Roaring Ann Got the Upper Hand of the Fickle Breezes, as Told by Jack, A. B.

MOST of you guys will remember — you readers of YACHTIN' I mean — the cruise wat I made in December on ther power-yacht "Marjory Jean"? An' you'll prob'ly remember me railin' 'bout not bein' caught out afloat, unlessen I had means of sailin', for gittin' to shore with ther boat. But they say a wise guy gits new idees, an' a fool never changes his think; so I reckon that's why my reverse gears is jammed in ther "Roarin' Ann's" dink.

You see, mates, I hung aroun' waitin' for ther "Ann" to come in from ther Bank; and, armed with a motor yacht ratin', got a new berth with much higher rank. Ther skipper, it seemed, had got "savvy" to ther reason the fleet beat him in w'en a heavy ca'm struck from ther east'ard, or other things killed off the win'. So he'd bought up a ten-hoss Trianus from an agent named Capting Ed. Hall; an' we pulled out o' Bosting for Georges with those ten hosses lashed in ther yawl.

As I told ye, I'd ris from ther for'peake, an' nary a trawl did I set, 'cause I'd signed on to handle that enjine (though me an' him never had met). But somethink got into ther weather ther hull time we stayed on ther Bank;—of breeze and of fish we had plenty, as well as of gas in ther tan Ther never wus breezes as favorin' since cod put old Mass. ther map, an' w'en we wuz ready for market it seemed like hed wind on tap.

Down in ther south'ard it settled, a beam reach for Cape Co you know: and ther "Roarin' Ann's" best pint of sailin', with heavy fish cargo below.

Just twenty-four hours from the Georges we slid up to tow an' made fast, an' ther way we had moved that old packet h auxil'ry power lashed to ther mast. But, come on to think of maties, ther hull thing looks creepy to me. We'v made seve trips with that dingee without hittin' a ca'm out to sea!

It looks like ther dope about enjines bein' handy to have in boat is pretty close onto the reason you see many afloat. But it ain't 'cause they comes in shovin', or towin' windjammers aroun', but ju 'cause they's ready for business, ther wind do know w'en to die down.

So that's why I've jammed my reverse gears ther "Roarin' Ann's" gasolene dink, an' stowed a batch of new idees, 'cause a fool never chang his think.

USEFUL HINTS & WRINKLES

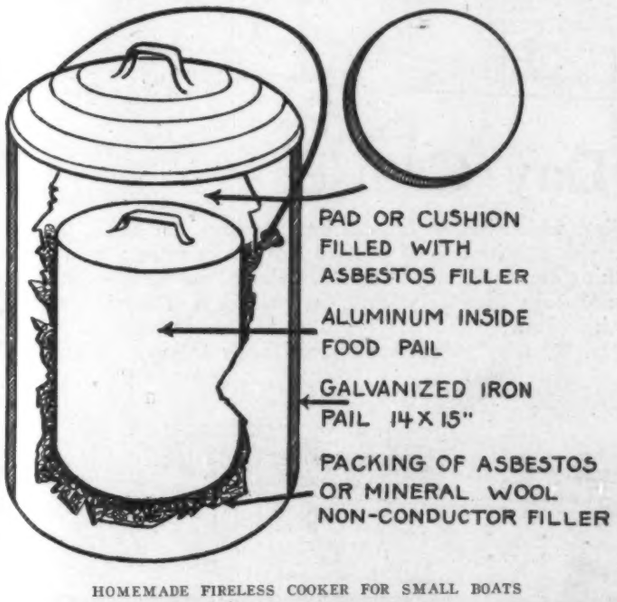
Under this head we will publish short articles from the readers of YACHTING, describing original ideas they have worked out for improving the efficiency and handiness of their boats and engines. These will be paid for at space rates. Articles must not be over 500 words in length, should be accompanied by ink drawings where possible, and must be addressed to Editor of YACHTING, 141 W. Thirty-sixth Street, New York. Here is a chance to be a philanthropist by giving to other boat owners information on some of the handy wrinkles you have applied to your own craft.

The Fireless Cooker Aboard Ship

Cooking aboard the small cruiser is usually accomplished with no little inconvenience, even when moored in a snug harbor; and when under way in bad weather cooking is practically out of the question, so far as the regulation galley outfit is concerned. And yet we all know that something piping hot would go rather well after a cold, wet morning's trick at the wheel, and 'tis easily done if you have the forethought to install a fireless cooker. Perhaps this advice may sound a bit odd coming from an old dyed-in-the wool salt, smacking as it does of the home kitchen, and yet the great utility of this simple device is conclusively demonstrated by a single trial; it requires no attention whatsoever, and best of all, there is no possibility of burning things. In point of fact the "straw oven" works so well that every single-handed craft should fit one up. The cooker literally works while you sleep, and solves to a great extent the ever-present cooking problem.

In the building of a fireless cooker the first item to be decided upon is its capacity, and this detail will of necessity vary according to the amount of room available. A very handy cooker may be quickly and cheaply fashioned from a common wooden box about a foot and a half square. Procure two enameled or aluminum kettles, one an inch or so smaller in diameter than the other and two inches less in height. This will allow it to fit within the larger kettle with an air space between and sufficient room to place a "hot plate" at the bottom if desired. To insulate the box to retain the heat line it with common sheathing paper, creasing and folding but not cutting to fit. Place the larger kettle in the center of this box, and tightly pack mineral wool, ground cork, or finely chopped hay or straw around it to the height of cover. For the top make a pad or pillow of any cheap material, a little larger than the box, stuffing it with the same kind of insulation used in the box. This pad should be at least three inches thick, or as thick as the height of box will permit. A good fitting wooden cover completes the fireless oven. Instead of using a box for the outside casing a galvanized iron pail, 14 x 15 inches, may be used, as shown in the accompanying sketch, with the two aluminum inside food pails, the larger one being packed as before described in the box, and the inner one fitting inside of it with an air space between the two.

To put the cooker in use, one has but to bring the food to a boil in the smaller kettle, place it within the larger one, place pad and cover on box, and forget it for a couple of hours, when dinner will be ready to serve. To shorten the time required for cooking, a piece of cast iron may be heated and placed in the bottom of the outer kettle, upon which the one containing the food is placed. An old stove cover will do the trick.



HOMEMADE FIRELESS COOKER FOR SMALL BOATS

Sounds simple; is simple; for the cooker always works. Practically everything may be cooked in this fashion—vegetables, meat, fowl, fish, dried fruits, cereals, etc. Being cooked slowly they will be done to a turn. A little experimenting to get the hang of it will enable anyone to prepare a good mess.

Of course, the fireless cooker suggested above is merely a rough idea, and after "seeing it work" the skipper will very likely desire to construct a larger and more ornamental oven. This may be done by making a box of the desired size and putting in partitions athwartships, making as many compartments as desired. This box, if well made, may be placed in the cockpit, cushioned, and made to do double duty as seat. A little-used locker may also be called into service by fitting it up as outlined above. In fact, I have done this very thing, equipping a little dory used for short fishing trips in this way.

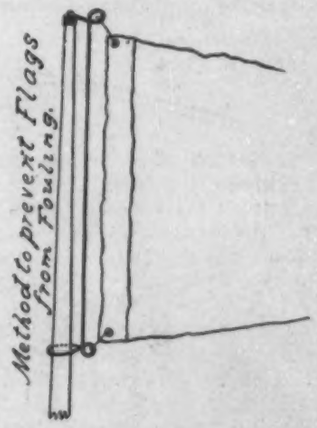
In the matter of containers for the food a good grade of agate or enameled ware is very satisfactory, but aluminum is the most attractive in appearance and is more durable. The latter metal is easily corroded by the action of salt water; but this is not likely to prove a considerable disadvantage in using it.

STILLMAN TAYLOR.

For Preventing Mast Head Flag From Fouling

On all small boats, both sail and power, trouble is usually experienced in keeping the mast head flag from fouling or getting wrapped around the staff. A handy method of rigging the flag to prevent this is shown in the accompanying cut.

Procure a light staff some three feet long, the length depending on the size of the flag to be flown. Then get a heavy piece of galvanized wire, into which bend an eye at the upper and lower ends some three or four inches further apart than the hoist of the flag, to which the grommets in the band of the flag may be made fast. Take a turn with the lower end of the wire around the staff, as shown in the cut, while with the upper end a similar eye will fit in a ferrule at the upper end of the flag staff, being held in place by a screw so that the whole wire will work freely around the staff. In this way the flag will never become wound around the top of the staff.



In a power boat with a single mast the proper places to fly the flags are: at the bow staff, the club burgee, and at the mast head the private signal or flag officer's pennant, while the yard arms are for the absent pennant, meal flags, etc. The ensign, of course, goes on the staff at the stern.

H. W. LOWERRE.

Hints on Gasolene Tanks

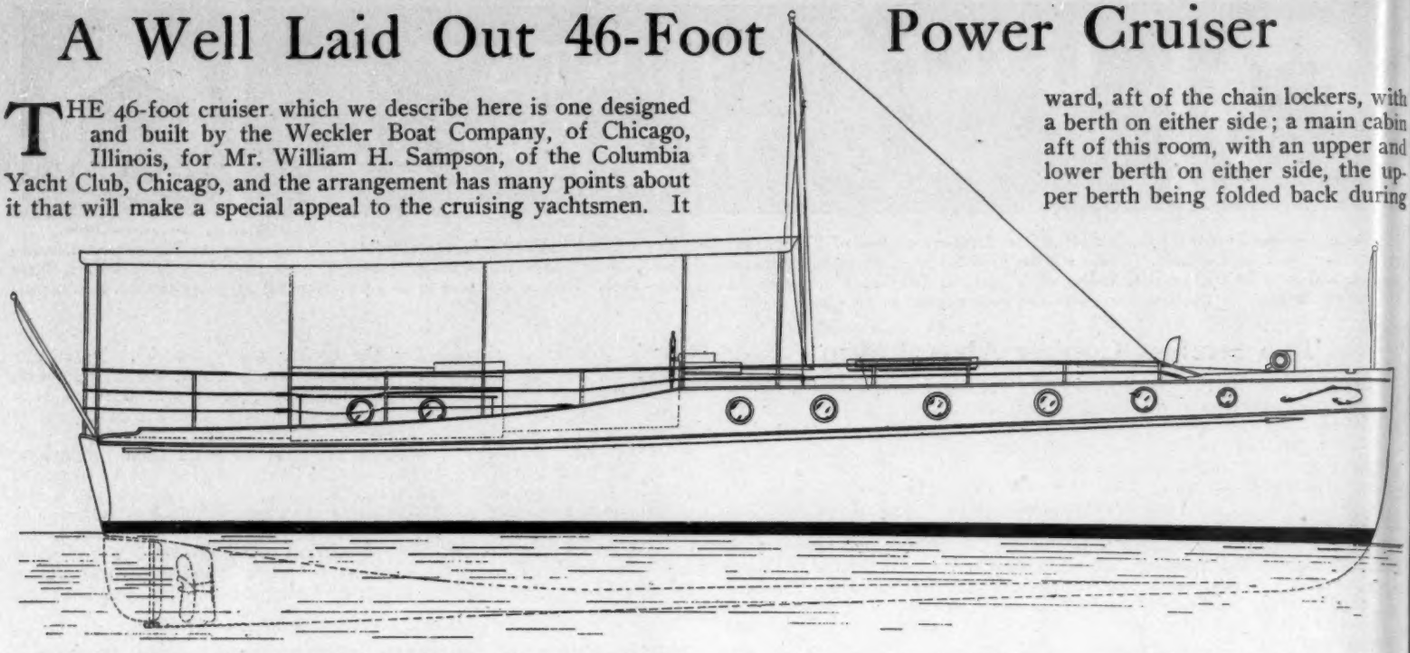
An uninterrupted fuel supply is obviously essential, yet the tank and connecting pipe line are frequently neglected. In the first place, the tank should be of ample size for a moderately long run; it must be securely and stoutly supported at both sides, top and bottom. To prevent swashing of the fuel when in a seaway, the interior of the tank should be provided with numerous baffle plates to break up the fuel and relieve the tank of the considerable stress to which it is subjected. That the tank may be always kept clean, a drain cock should be put in at the lowest point, so that the grit and other sediment filtered out of the gasolene may be gotten rid of by flushing out the tank occasionally. Many tanks are fitted with the outlet pipe a half inch or so from the bottom, with the idea of preventing dirt from flowing into the carburetor. In tanks so equipped a drainage cock is an absolute necessity for draining off the accumulated sediment.

To prevent leaking couplings on the supply pipe, connect up a small coil of copper pipe between it and the tank, and a second coil at the opposite end of the pipe line between supply pipe and the carburetor. The coil acting as a spring will absorb the vibration communicated to the feed pipe, and the boatman will no longer be bothered by frequent leaks.

C. S. T.

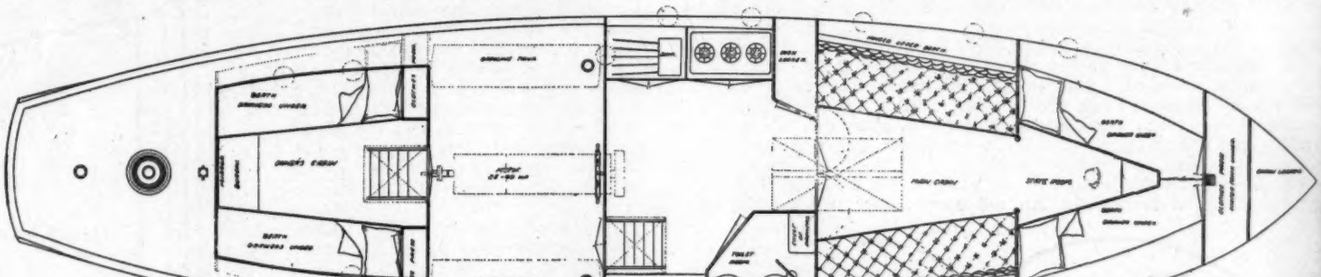
A Well Laid Out 46-Foot Power Cruiser

THE 46-foot cruiser which we describe here is one designed and built by the Weckler Boat Company, of Chicago, Illinois, for Mr. William H. Sampson, of the Columbia Yacht Club, Chicago, and the arrangement has many points about it that will make a special appeal to the cruising yachtsmen. It is not often that a boat of this size will provide comfortable accommodations for eight, with a separate berth for each, but the designers have provided for this number without in any way cramping the boat elsewhere.



The dimensions are: Length over all, 46 feet; beam, 11 feet; draft, 3 feet 5 inches. The boat is full bodied, is fairly sharp forward, with considerable flare to the top sides, has a graceful sheer, getting away somewhat from the perfectly straight sheer frequently incorporated in modern cruisers, and her profile, with its well-proportioned raised deck forward and small cabin house aft, is very pleasing.

The accommodations below consist of a double stateroom forward, aft of the chain lockers, with a berth on either side; a main cabin aft of this room, with an upper and lower berth on either side, the upper berth being folded back during the daytime, while amidships is a combination galley vestibule and engine room, containing toilet room, icebox, lockers, stove, etc. The engine itself is under the flush deck, between the forward and after cabins, so that only the flywheel is in this compartment. This keeps the heat and dirt of the engine from this compartment, while it facilitates starting by having the flywheel where it can be easily reached. Double swinging doors separate the stateroom and saloon from the 'midship compartment. The galley is seven feet six inches long, while there is four feet of head room under the flush deck where the engine is installed. The after cabin is entered by a companionway from the deck, contains a berth on either side, with bureau at the after end, lockers, etc.

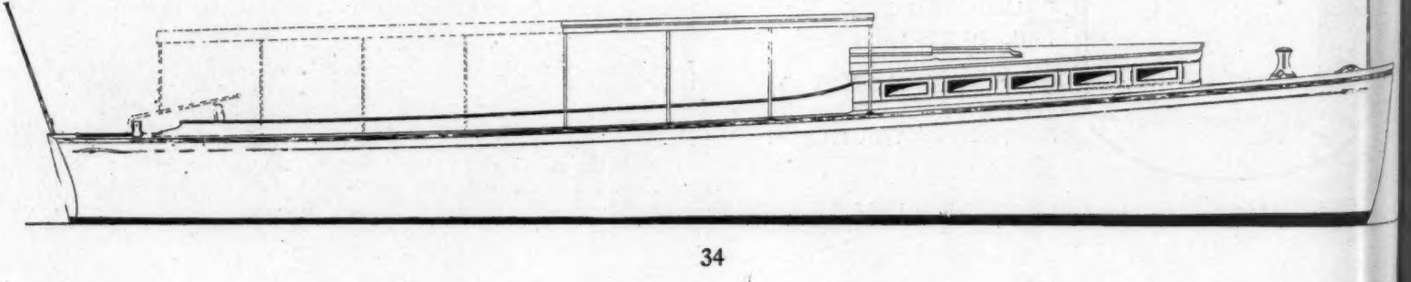


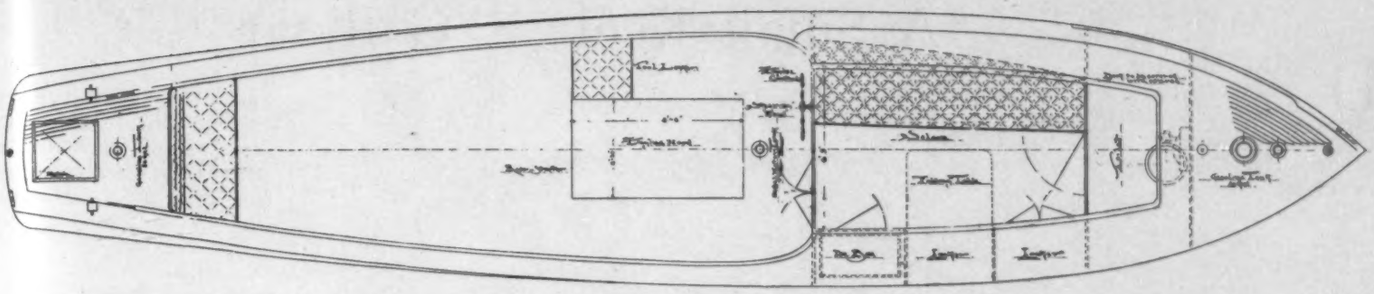
A High-Speed Day Cruiser

THE design herewith shows a fast type of day cruiser recently designed by J. Murray Watts, N. A., of Philadelphia, for Mr. Frederick Hemsley, of the same city, who will use her at his country place at Atlantic City. The boat has recently been built at the yards of John C. Vanderslice, of Camden, N. J.

Mr. Vanderslice has not only built the boat, but will install the engine, which is a 50 horsepower Sterling, and outfit the boat so that she will be turned over to her owner after a trial trip with nothing to do but get his stores aboard preparatory to the trip around Cape May to Atlantic City, which is scheduled for the last week in June.

Mr. Hemsley's ideas have been closely followed in this plan, so

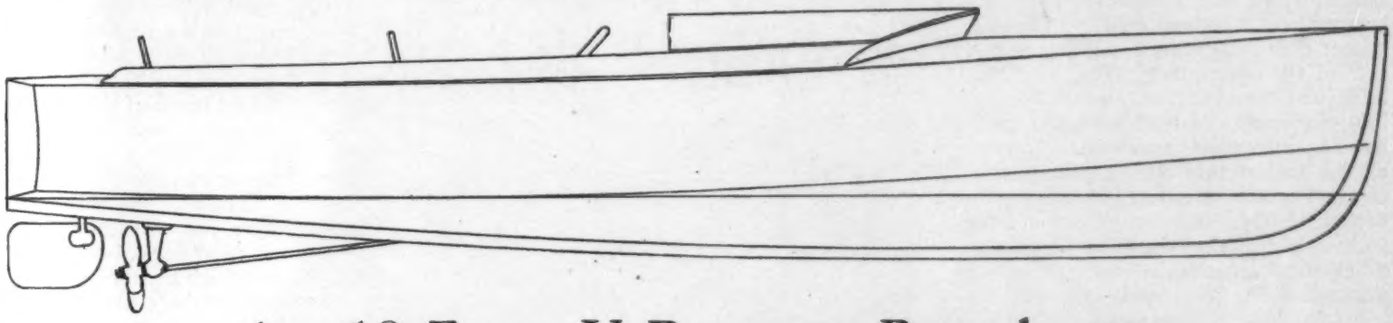




as to provide a day boat with the maximum amount of cockpit room and yet a fair amount of accommodation. As the boat will be used continually going in and out over the bar, sea-worthiness was a prime object, and for that reason the freeboard has been kept high and the construction extra strong. In spite of this, a sustained speed of 15 miles at sea is guaranteed.

The engine is amidships, in the cockpit, and is enclosed in a metallic hood hinged exactly as an automobile hood, so that no moving part of the engine projects out of the casing. The engine is controlled from the helmsman's position on the small bridge deck aft of the cabin house. This cabin house is finished, as is the rest of the boat, in mahogany; and while it appears low, it gives 6 feet head room under the carlins throughout. This gives a toilet room, finished in white enamel; a main saloon, 8 feet long, with a comfortable sofa in it, and a tiny galley arrangement, consisting of ice box and small alcohol stove, capable of looking after a good-sized party.

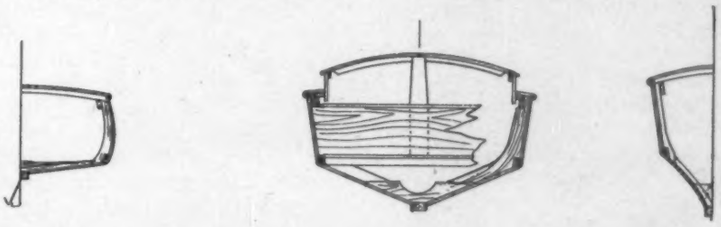
The forward half of the cockpit has a permanent roof with wooden stanchions. By means of a set of curtains with windows in them this part of the cabin can be converted into a closed-in pilot house and engine room in case of bad weather, while the after half of the cockpit merely has a light, removable canvas awning hung on pipe stanchions. In this way there is had the unusual combination of a very fast day cruiser with at all normal times an extremely large cockpit; yet this same boat on a long trip, such as from Atlantic City back to Philadelphia, can be converted into a modified cruiser, having a protected pilot house and engine room, a comfortable saloon, with a small but practical galley, and a toilet room. The dimensions of the boat are 40 feet over all, 8 feet 3 inches beam, and 2 feet 6 inches draft.

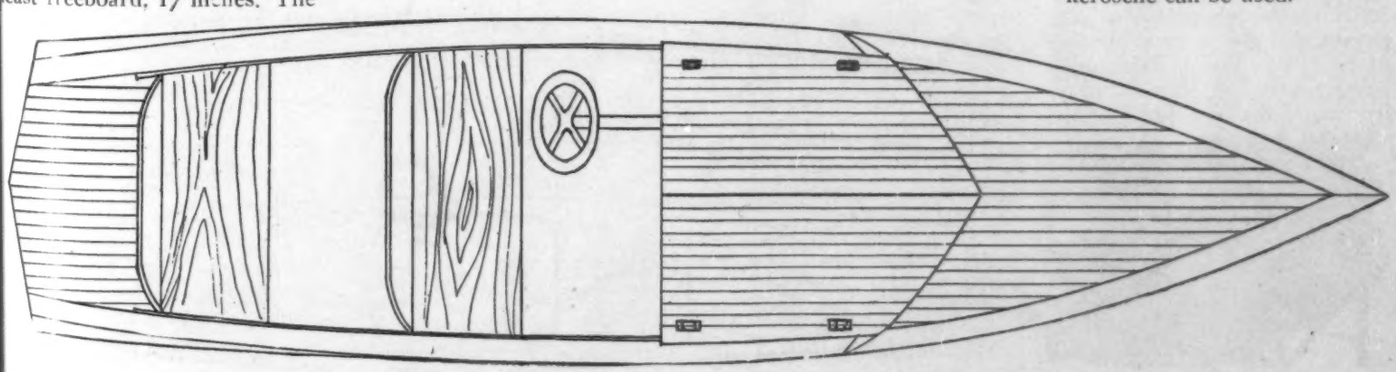


An 18-Foot V-Bottom Runabout

THE V-bottom model for runabouts and small cruisers has won such a secure place for itself that every new boat of this type proves extremely interesting to all boatmen. The plans that are published herewith are of a new 18-foot boat of this type, recently designed by the Bayonne Launch Company and building by them for Mr. Elmer S. Cook, of New York. She is of the regular Doyle V-bottom model, with curved side frames and concave sections forward. The principal dimensions are: Length over all, 18 feet; beam, 4 feet 7 inches; freeboard at bow, 27 inches; least freeboard, 17 inches. The boat is of the regular runabout type, the engine being just forward of amidships and covered by a hinged hatch, making it easily accessible. The seating accommodations in the cockpit will take care of five people comfortably, and six with a little crowding.

She is built in the very best manner, the decks, engine hatches, bulkheads, coaming, covering board, etc., being of oak, finished bright, and the planking of cedar. The power plant of this particular boat will be a 6-H. P., 2-cylinder, 2-cycle motor, with reverse gear and jump spark ignition, with a kerosene carburetor, so that gasolene or kerosene can be used.

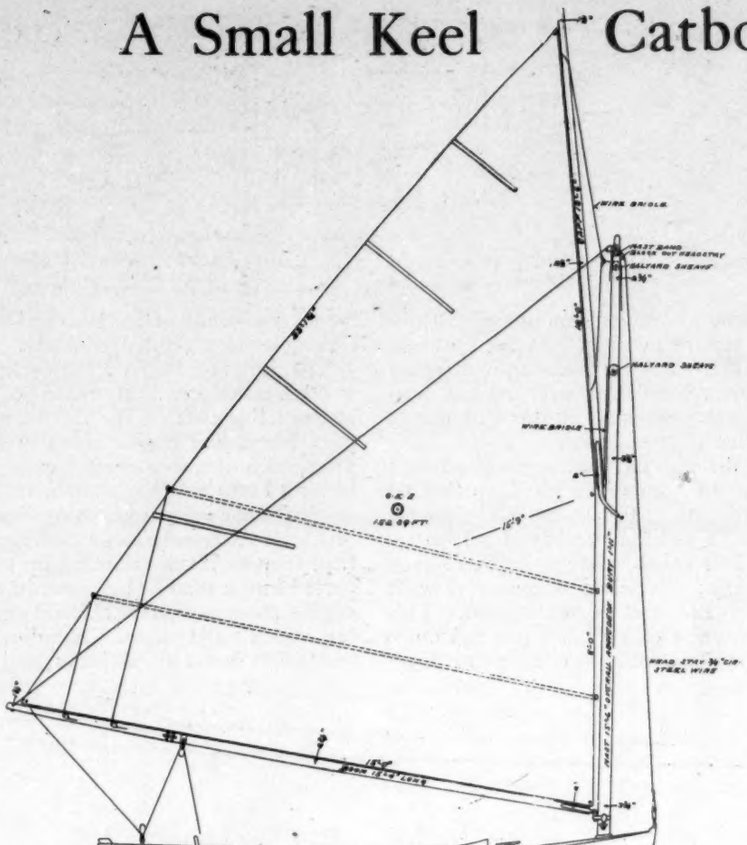




A Small Keel Catboat

DURING the past winter there have appeared in YACHTING the plans of several small catboats which have aroused considerable interest. The smallest of these was a 15-footer, which we thought was about as small a boat as could be found with this rig, outside of a sailing dinghy. One of our readers, however, has sent in the accompanying plan of a very interesting little boat which was designed by Charles P. Burgess in 1911 for Edward K. Butler, of Jamaica Plain, Mass. The sail plan shown was, however, designed this year by Ralph E. Winslow, of Boston.

The dimensions of this little craft are: Length over all, 13 feet 8 inches; length waterline, 11 feet 4 inches; beam, 5 feet 2 inches; draft, 2 feet 8 inches, with a sail area of 152 square feet. The boat is of the keel type, and has 450 pounds of lead ballast run in outside, which is all the ballast that she carries. There is a watertight cockpit, 6 feet long by 3½ wide, which makes the boat practically unsinkable and uncapsizable. This cockpit has two thwarts, one amidships and the other aft, the middle one being seldom used except when it is necessary to row the boat, thus leaving the cockpit clear, which is a great advantage in a small boat.



The sail plan is high and narrow, the gaff being peaked well up and the foot of the sail being cut high so as to clear the heads of the crew when coming about or jibing.

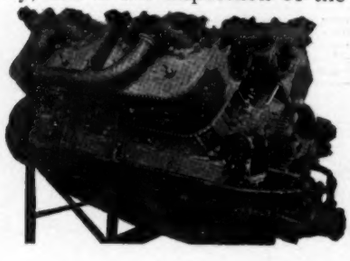
She is a chunky little boat, with a rounded stem and with the rudder hung outside over a slightly raking transom. The boat has the typical catboat sheer, and she should prove very able and seaworthy for a boat of her size. The sail plan is considerable for a boat of this length and beam, but with her outside ballast and hard bilges she should be able to carry it well, and should go to windward in a sea that would bother centerboard boats of this size. The owner writes that she has proved very good and satisfactory in every way.

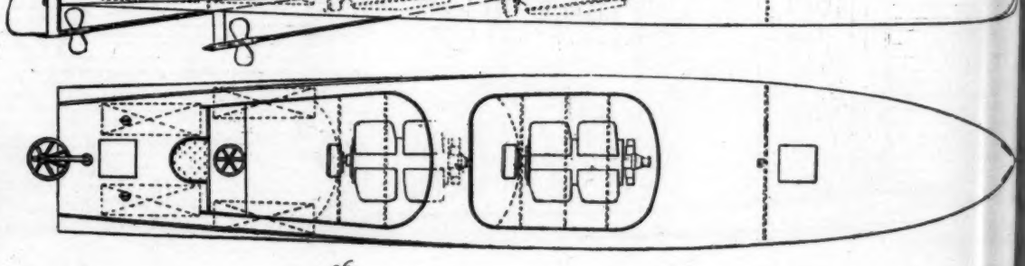
The boat would be an ideal type for a small one-design class or for a boat for boys in which to learn to sail, the watertight cockpit and outside ballast making her very safe.

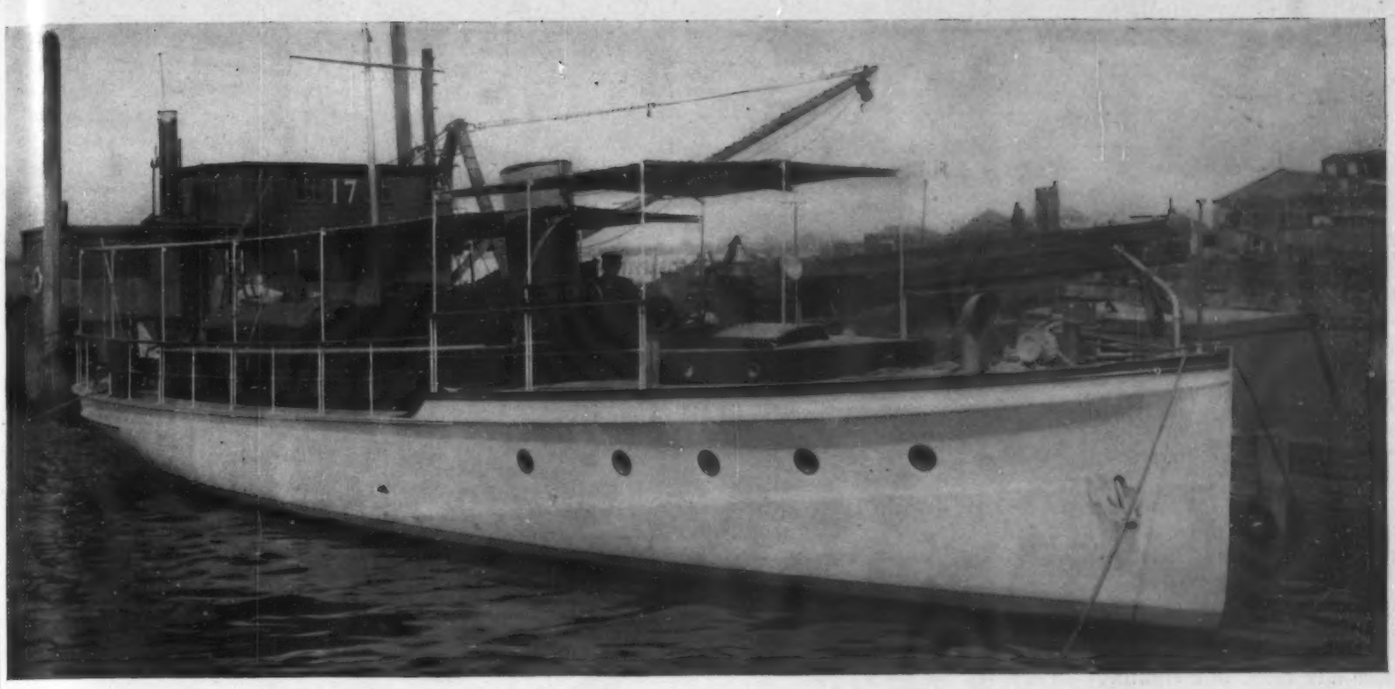
A British International Trophy Defender

THROUGH the courtesy of Motor Ship and Motor Boat, we reproduce herewith the plans of one of the most interesting and, at the same time, most "likely" boats being built in England for the defense of the British International Trophy. This boat is Cordon Rouge Majeur, now being built for Mr. Hollingsworth by J. W. Brooke & Company from designs by Cox & King. This is a large boat, the principal dimensions being: Length over all, 39 feet 6 inches; beam, 7 feet; and depth, 3 feet 5½ inches. Her design follows very closely that of the latest Cox & King 21-foot-class boats, but on a larger scale. As the seagoing qualities of the 21-footers are exceptional, it would seem as though the new boat should also give a good account of herself in rough seas, there being a very low center of gravity, due to the disposition of the machinery, which consists of two V-type Brooke motors of eight cylinders each, a photograph of one of which is shown here. These are placed in tandem. The propellers are 22 inches in diameter. It has not been given out what power this engine will develop, but, judging from the lines of the boat, she should be easily driven and should prove very fast, especially in rough water.

A number of boats are being built in England for the defense of the Trophy, one of the new ones being a boat for Mr. May, of the Sussex Motor Yacht Club, and building by Saunders, of Cowes. There is also the Thornycroft hydroplane Crusader and last year's Maple Leaf.







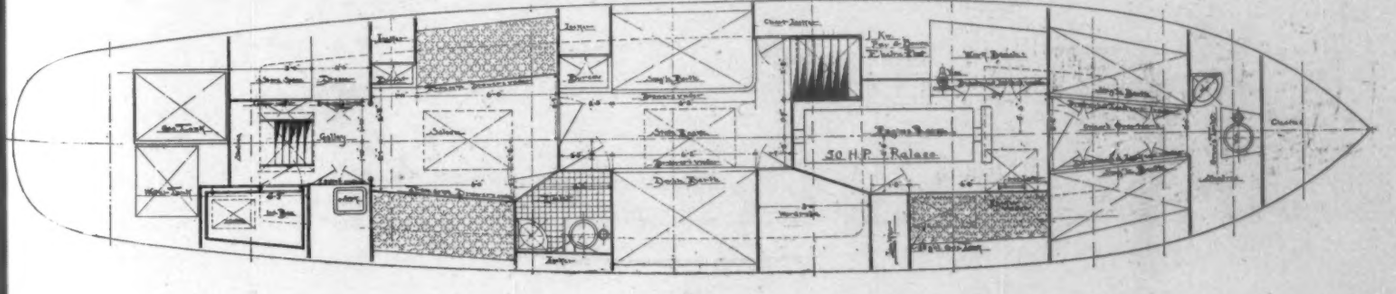
Content, an Able 58-Foot Power Cruiser

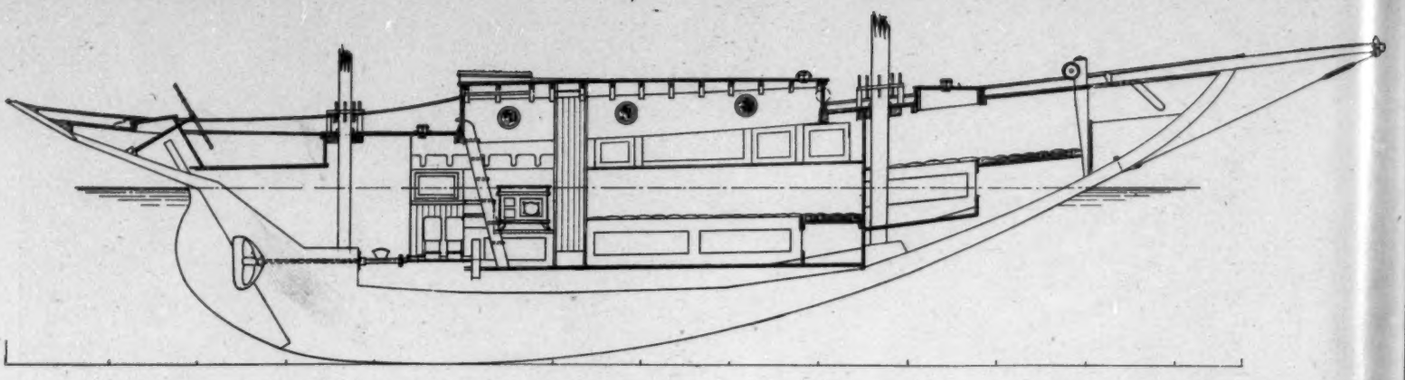
THE Mathis Yacht Building Company, of Camden, N. J., have recently completed a very able and handsome power cruiser from designs by J. Murray Watts, of Philadelphia, for Mr. M. Byron Megargee. The boat was designed as a comfortable cruiser of moderate draft for use in Florida during the winter, and is sufficiently seaworthy to make the trip to Florida and back in comfort. The outboard profile of the boat is very striking, the lines resembling somewhat a small steamer, while the powerful-looking funnel and military mast heighten this effect. There is considerable flare to the top sides forward, and the deck layout is rather unusual, there being a small trunk house on the raised deck, giving access to the crew's quarters forward, while the after cabin house extends from this break in the deck line aft. This boat is 58 feet 7 inches long over all by 10 feet 8 inches beam, and is equipped with a 50 horsepower heavy duty, 4-cycle motor, which gave her a sustained speed of 12½ miles per hour on her trial trip. The boat is steered and controlled from the raised deck just forward of amidships. The arrangement below provides a large double stateroom, a main saloon and a toilet room connecting with both of these compartments. There are two companionways to these quarters, one of them leading to the bridge deck. The galley is located aft, and is unusually well furnished with a large ice box, pantry, dresser, etc. These quarters are finished in Colonial style with white enamel and mahogany trim. Ample ventilation for southern use has been provided, with large windows around the after cabin house, while the dummy stack ventilates the engine room.

ENGINE ROOM

An unusually large water and fuel supply has been provided, giving the boat a wide cruising radius, and she will be completely fitted out in the most up-to-date fashion. A separate electric light plant of 40 volts and 25 amperes provides current for the Tungsten lamps, and there is a large searchlight installed for night work. She is not only unusually comfortable, but also extremely handsome, able and fast.

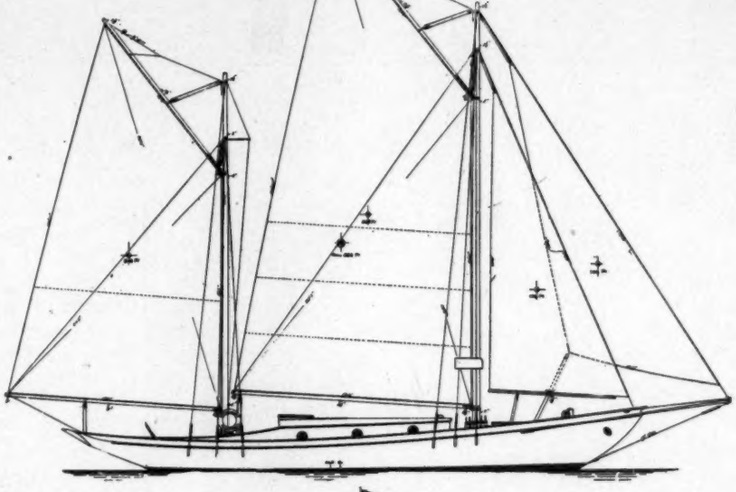
Forward of the owner's quarters is a roomy forecastle with two berths for the crew, toilet room, etc., while there is a berth for the engineer in the engine room, which is located just forward of amidships. There is also an auxiliary engine in this compartment for lighting and pumping purposes.





An Able 30-Foot Waterline Cruising Ketch

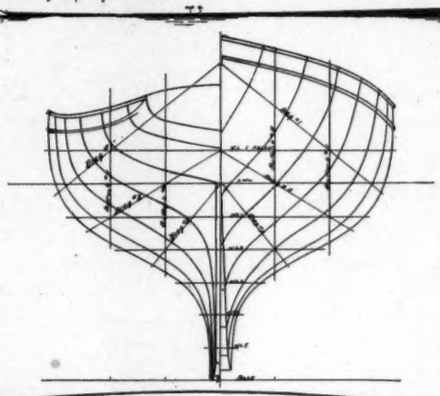
THE plans of the cruising ketch which we publish herewith are by a Canadian architect, Mr. S. Matheson, of Montreal, for two boats, one for Mr. Thomas Hood and the other for himself, to be used strictly for cruising purposes. The plans show ideal little boats for the purposes for which they are designed, and will bear close study by all those interested in a comfortable, able craft and one which can go anywhere where it is desired to take a boat of this size.



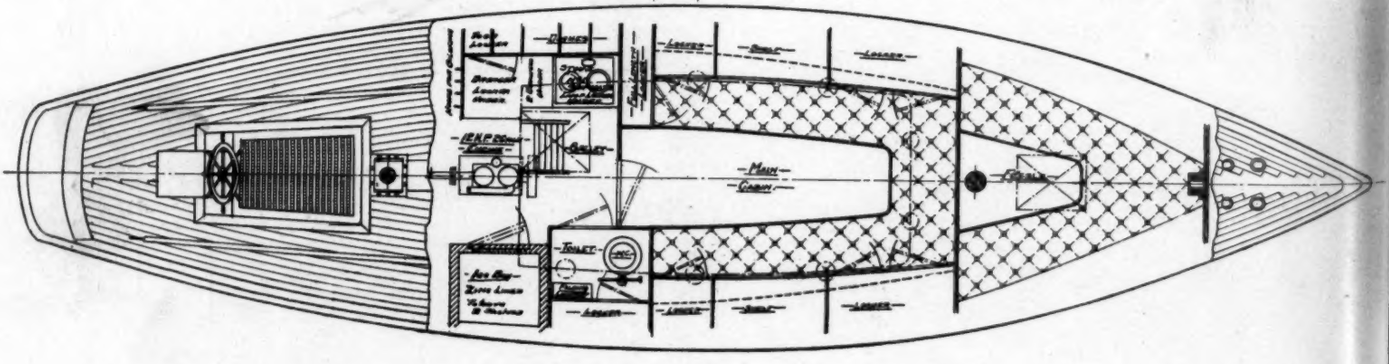
The general dimensions of the boats are: Length over all, 42 feet; length between perpendiculars, 30 feet; beam extreme, 10 feet 6 inches; beam L. W. L., 10 feet; draft, 6 feet; displacement, 11.3 tons; sail area, 880 square feet, distributed as follows: Mainsail, 390 square feet; mizzen, 276; fore-staysail, 108; and jib, 106.

The lines show a graceful sheer, with good freeboard forward and aft, and fairly low amidships, after the fashion of the fishermen. The 'midship sections are full, with good displacement, and yet an easy bilge; the forward sections are sharp, while the run is sweet and easy. The cabin house has been kept low and with very little crown, yet there is full head room below decks. A fairly high rail was given her to obtain a better foothold when working on deck.

There is a small cockpit aft of the jigger-mast, with the deck carried across flush between this mast and the after end of the house. Under this deck is the engine room, icebox, and part of the galley. The arrangement below is well thought out, with an idea to convenince in cruising without a paid hand, the galley and toilet room being aft under the companionway, making a sort of vestibule before entering the main cabin. This not only gives good ventilation for the galley, but makes a handy place in which to take off oilers when going below in wet weather. The main cabin has transoms on both sides and at the forward end, with excellent locker and shelf space back of them, while the forecastle is also provided with transoms for sleeping purposes. The deck openings are few, and special attention has been paid to making them watertight, so that she will be snug and dry below in the worst weather. The rig is extremely well proportioned and handy, with double headsails, and she should be easily handled under almost any combination of these four sails. The engine shown is a 12-horsepower, 2-cycle, 2-cylinder machine, which should drive the boat between six and seven miles an hour. The galley is equipped with a No. 12 Shipmate coal stove, with a heavy galvanized iron smokepipe.



The specifications call for the very best of material in the hull, the construction being heavy and substantial for sea work. The ballast consists of 4,000 pounds of lead outside bolted through heavy floor timbers and 2,500 pounds of inside lead.



ST. THOMAS HARBOR IS FAR-FAMED FOR ITS BEAUTY

A Short Story of a Long Cruise

By GODFREY H. ATKIN

JOHN T. M'CUTCHEON, "EVERY STITCH A SAILOR"

ON the 24th of February last, with the thermometer standing at 14 above zero, a staunch schooner yacht poked her nose out of Boston Harbor into the stormy Western Ocean, when Atlantic liners were coming into port days late and coated with ice. The boat was the sturdy little schooner Talofa, 128 feet long over all with a beam 26 feet and drawing 14 feet of water, owned by Mr. Ogden T. McClurg of Chicago, who was on board with Capt. Haines and a crew of 14 men. That Mr. McClurg was the sole occupant of the after cabin was due to the fact that everyone he asked to share the trip with him seemed to have important business affairs to keep them ashore until the vessel reached the West Indies and warmer weather, though they were eager enough to join him later.

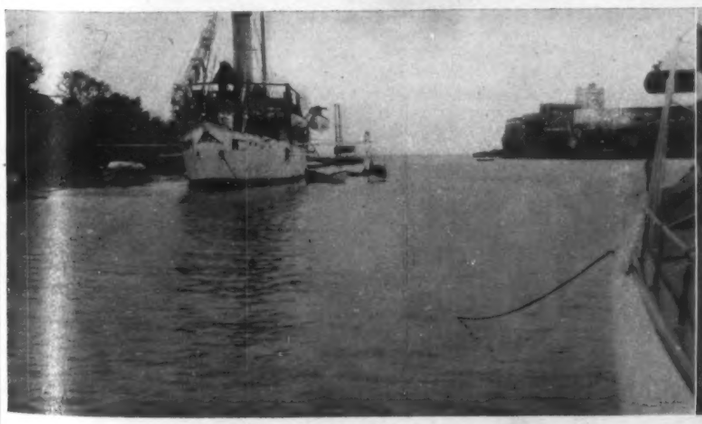
The compass adjuster finished his job as they neared the lightship and was taken off by a passing Government tug whose skipper blew a farewell blast, and the course was set for the end of Cape Cod. Carrying full sail and with a light breeze the Talofa was abreast of Highland Light at 7 P. M., from which she took her departure for Bermuda, her first stop.

A N. N. E. wind accompanied by squalls ushered in the 25th of February, and covered the yacht's decks with snow, but logging ten knots she kept her course. By noon the wind had freshened and everything was lowered but a big square sail that pushed her along at an eleven knot clip that night and all next day across the Gulf Stream. On the 27th the wind hauled to the S. W. and blew at a 60-mile clip, keeping it up for 36 hours, during which time Talofa was hove to under main trysail and forestaysail.

After a day's beat dead to windward St. David's Head light was picked up just before dawn on March 2d. A pilot came aboard with daylight and at 8 A. M. the schooner was safely anchored in St. George's Harbor.

The following day the R. M. S. Arcadian brought two guests to cheer the lonely owner, and after seeing the sights of Bermuda and giving the crew a rest ashore Talofa started on the second long leg of her voyage to the tropics. Capt. Haines bore off to the eastward to lat. 60 to catch the N. E. trades.

That first night out the Bermuda rum got in its work in the forecastle and a free fight to decide who should be the cock of the cabin took place. The Captain and mate, assisted by an iron step ladder deftly dropped over the heads of the principal contestants,



ANCHORED UP STREAM AHEAD OF THE U. S. S. WHEELING

"COVERED THE DECKS WITH SNOW"

quickly brought the fight to an end and the wounded warriors sought their bunks.

Down the trades she logged as high as 244 nautical miles in one day, and big seas were encountered. Full lower canvas was carried all the way, and on March 12 at noon, after passing the grim, moss-covered Morro Castle, Talofa anchored in the splendid harbor of San Juan, Porto Rico.

At five the same day the S.S. Brazos, from New York, landed three more guests; so now her cabin passengers were: Messrs. McCutcheon, "every stitch a sailor," Taylor, Boardman, Rutter and the writer; and a jolly time we had taking in the many interesting sights of that old Spanish fortified city.

THE AFTER GUARD: CAPT. MC CLUGR, G. H. ATKIN, DR. BOARDMAN AND MESSRS. RUTTER AND TAYLOR

On the evening of March 14 we set sail for Culebra, a small island due east of Porto Rico and formerly a United States naval station. Anchoring between S. W. Key and the island, we visited the little village and bathed on the coral beach, two of the party getting badly stung with sea urchins, and sailed for St. Thomas the same day, arriving there early Sunday morning, March 16.

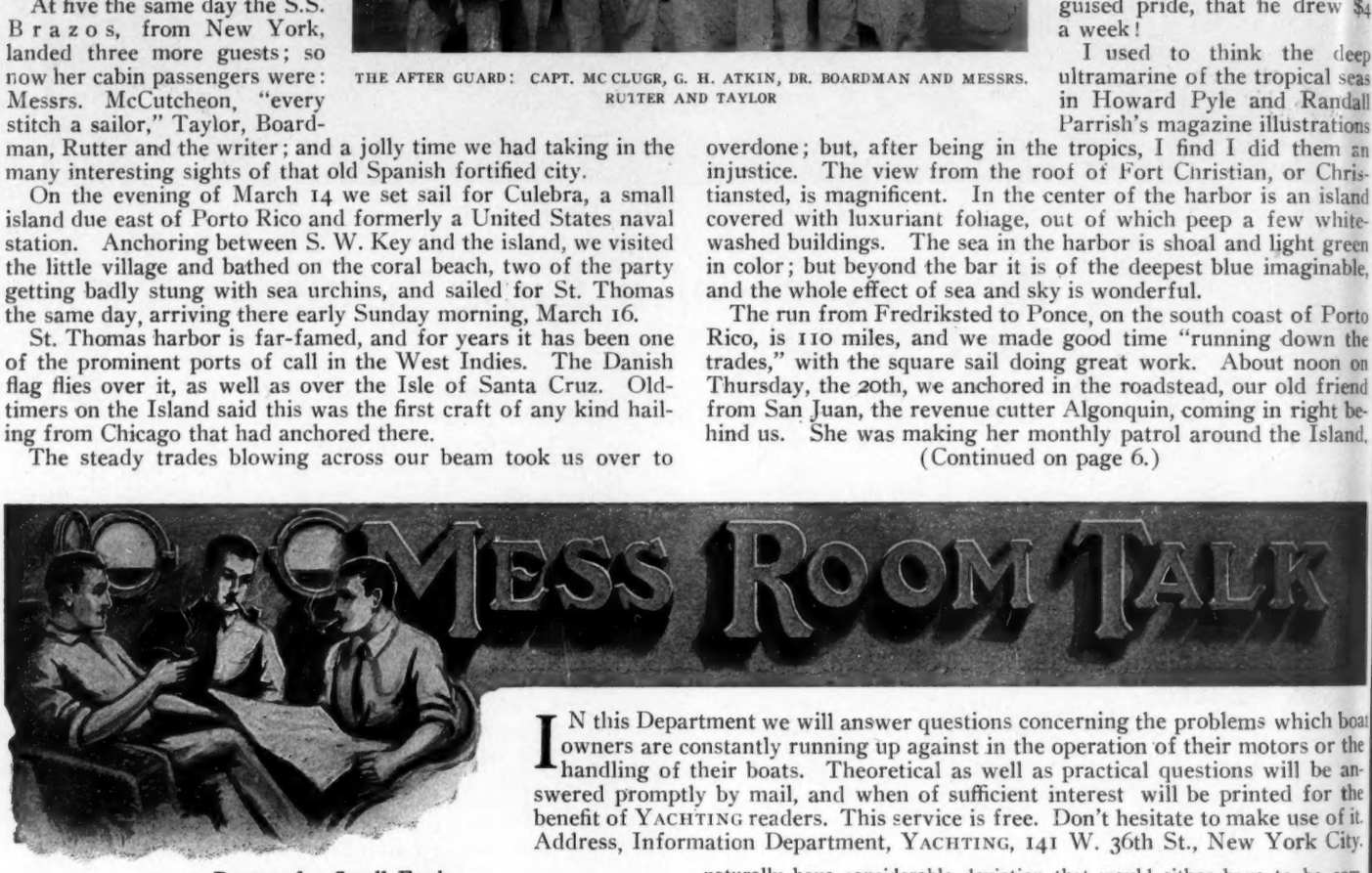
St. Thomas harbor is far-famed, and for years it has been one of the prominent ports of call in the West Indies. The Danish flag flies over it, as well as over the Isle of Santa Cruz. Old-timers on the Island said this was the first craft of any kind hailing from Chicago that had anchored there.

The steady trades blowing across our beam took us over to Santa Cruz at a good gait the next night, and we anchored in the open off Frederiksted at the west end of the Island and motored over to Christiansted, the capital, 15 miles away, past sugar and cotton plantations. Labor is very expensive on the Island, due to the absence of any trade unionism. Field workers draw the munificent wage of 25 cents a day. Our chauffeur told us, with undisguised pride, that he drew $4 a week!

I used to think the deep ultramarine of the tropical seas in Howard Pyle and Randall Parrish's magazine illustrations overdone; but, after being in the tropics, I find I did them an injustice. The view from the roof of Fort Christian, or Christiansted, is magnificent. In the center of the harbor is an island covered with luxuriant foliage, out of which peep a few white-washed buildings. The sea in the harbor is shoal and light green in color; but beyond the bar it is of the deepest blue imaginable, and the whole effect of sea and sky is wonderful.

The run from Fredriksted to Ponce, on the south coast of Porto Rico, is 110 miles, and we made good time "running down the trades," with the square sail doing great work. About noon on Thursday, the 20th, we anchored in the roadstead, our old friend from San Juan, the revenue cutter Algonquin, coming in right behind us. She was making her monthly patrol around the Island.

(Continued on page 6.)



IN this Department we will answer questions concerning the problems which boat owners are constantly running up against in the operation of their motors or the handling of their boats. Theoretical as well as practical questions will be answered promptly by mail, and when of sufficient interest will be printed for the benefit of YACHTING readers. This service is free. Don't hesitate to make use of it. Address, Information Department, YACHTING, 141 W. 36th St., New York City.

Power of a Small Engine

PHILADELPHIA, PA.

DEAR SIR:—I have recently purchased a second-hand four-cycle, four-cylinder engine of 3¾-inch bore by 5-inch stroke, and I do not know what power it develops. Can you tell me what power it would develop at 750 revolutions per minute, and what it would develop at 1,000 revolutions per minute, and also what would be the consumption of gasolene per hour at these two speeds? L. S.

At 750 revolutions per minute you would probably get from 17 to 18 horsepower out of this engine and at 1,000 revolutions per minute about 22 horsepower. The 1,000 revolutions per minute seems pretty high unless the engine were designed for speed work. With the carburetor properly adjusted your consumption of fuel would be approximately 2 gallons with the engine running at 750 revolutions per minute, and from 2½ to 2¾ gallons with the engine running at 1,000 revolutions per minute. Different makes of engines differ in the fuel consumption, but these figures should be found approximately accurate.

The Position of Compass on a Power Boat

TOLEDO, OHIO.

DEAR SIR:—In my 35-foot power cruiser the steering wheel is right over the engine, so that it necessitates my compass being placed within six feet of the engine if I am to see it from the steering position. Is it necessary to have this compass compensated for deviation? S. B.

Ordinarily a compass placed as close as this to a steel engine would naturally have considerable deviation that would either have to be compensated by magnets or allowed for in steering a course, making up a deviation card. You can have the compass compensated with magnets screwed on deck or bulkhead close to the compass. If you cannot easily change the location of your steering gear so as to bring it further from the engine, and you do not care to go to the expense of having your compass compensated, I would advise you to get another good compass which you can use for a Standard compass, placing it somewhere forward, where it will be away from the influence of the engine, taking care to see that it is not near any anchors, chain cables, or boat davits that might affect it. In using your compass set all courses on this Standard compass forward, taking a reading at the same time on your steering compass to steer by. Frequent checkings between the two compasses will enable you to steer a correct course on your steering compass. As a rule, a compass is more apt to be affected by an engine if it is in or near the same horizontal plane as the engine, than if it is considerably above or below it. If you are sure your Standard compass is correct you can make out a very good deviation card by swinging the boat on the eight cardinal and inter-cardinal points, noting the difference between the readings of your Standard compass and your steering compass. These differences are your deviation, east or west, as the case may be.

Changing Rig on Thirty-Foot Sloop

BATAVIA, ILL.

I would like a little information in changing a sloop-rigged yacht into a small schooner. The boat is 30 feet long over all and 9 feet 6 inches beam. Has centerboard 8 feet long, starting 9½ feet from the bow.

Her waterline is 24 feet; depth at bow, 45 inches; draft (board up), 20 inches; depth at amidships, 26 inches; depth at stern, 25 inches. Could this boat be changed into a small schooner? As a sloop she carries 535 square feet of canvas. Could you tell me the dimensions of her sails as a schooner, and size of spars and where they are to be placed; also could a keel be added in place of centerboad? Would this boat be satisfactory for long cruises and could one man handle her? B. S.

Undoubtedly you could change the rig of this boat from a sloop to a schooner. I do not, however, think that you would find a schooner rig on this boat as handy or as effective as the yawl rig.

The yawl rig will be just as handy, will give you better driving power, and will give you practically all of the boat free for accommodations, whereas in the schooner rig the mainmast would be coming down in the center of the boat, and would probably interfere with the centerboard trunk, unless the mainmast were stepped pretty far aft.

I cannot give you exact measurements of the sail plan as schooner or yawl without a profile drawing of the boat or data for obtaining the center of lateral resistance of the hull. If you will draw such a profile of the boat with present rig we can indicate the approximate size of the new rig. If you use the yawl rig, the mainmast, as a general proposition, can be stepped from 4 to 6 feet abaft of the stem. If you adopted the schooner rig you would be governed in the position of the mainmast by the location of your centerboard. A keel could be added to this boat if necessary, but it might be an expensive proposition.

The yawl rig is an excellent one for single-handed use and for cruising. I cannot tell whether the boat would be satisfactory for cruising in open water without seeing her plans.

Overcoming Engine-Starting Difficulty

PORT JEFFERSON, L. I.

I experience a good deal of trouble in starting a 20-horsepower, two-cylinder, two-cycle engine which I have recently bought, and have to inject gasolene through the petcock each time. Is this customary in two-cycle engines? Also, I have found that the noise of the exhaust is excessively loud, although the muffler and exhaust piping is water-cooled. H. L.

It is customary in a number of makes of engines to prime the cylinders with gasolene when starting up with the cylinders cold. This is not difficult and should not cause you any bother. The difficulty in starting may be due to the fact that the timing of the ignition is not right, and it may be also due to a faulty mixture from the carburetor. If the air supply is too great it would make the engine more difficult to start, and if the spark were too far retarded it would have the same effect. You had better examine the timing and also the adjustment of your carburetor.

The cause of the exhaust noise you complain of may be due also to this wrong timing, a retarded spark making the engine noise excessive. This trouble may also be due to leaky joints in your exhaust line or to an inefficient muffler. If the noise you complain of is in the exhaust it should not be difficult to properly muffle it.

Regarding Certain Flag Routine

BROOKLYN, N. Y.

Will you kindly answer the following questions regarding flag etiquette? A. N.

Q.—On days of National mourning the ensign shall be placed at half-mast. Is it proper to masthead the ensign at 12 o'clock noon?

A.—On days of National mourning the ensign only should be half-masted, and according to most authorities should be half-masted throughout the day. The above is the general practice, though some books on flag etiquette say that the ensign should be mastheaded at 12 o'clock noon.

Q.—A commodore is receiving official calls on a boat having two masts and is visited by two commodores of different clubs at the same time. Are they both to be recognized or only the first one to arrive, and how should their flags be flown?

A.—This contingency is not covered in any book on the subject that we can find. The New York Yacht Club book on yacht routine, practically the authority in these waters, provides that "When a flag officer makes an *official* visit his flag, if senior, should be hoisted at the fore of a yacht with two or more masts, and at the main of a single-masted yacht, the burgee being hauled down. The flag officer's flag should be kept flying while he remains on board, and when leaving, and well clear of the yacht, one gun should be fired and his flag be hauled down." This evidently applies only to the senior flag officer present.

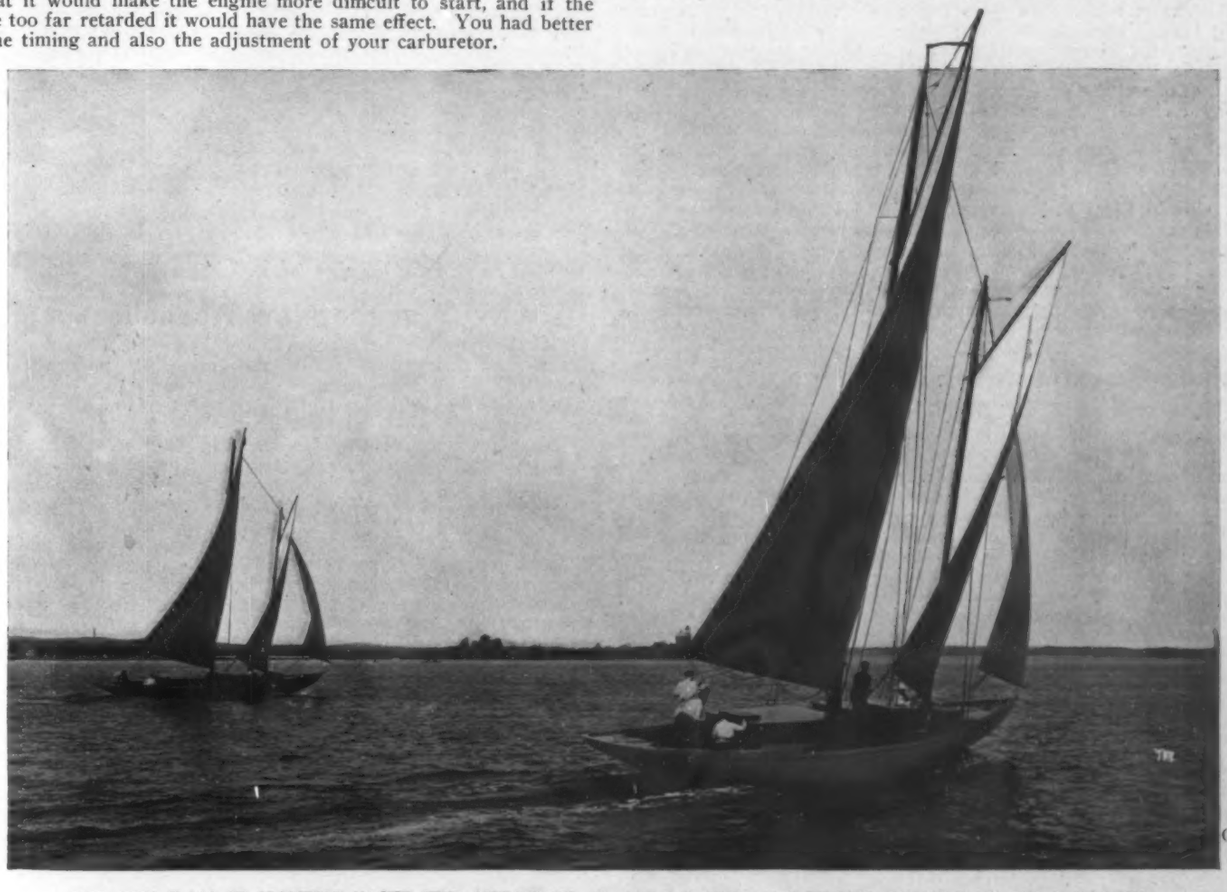
Q.—A commodore is invited to take a trip as a guest on a large yacht carrying only a military mast. Where should his flag be flown?

A.—If he is making an *official* visit or trip, it would seem proper to carry his distinguishing pennant at the masthead of the signal mast in the same position that his distinguishing flag is carried on his own vessel.

Q.—A commodore of a club, not having a large enough boat to carry his flag, flies his flag from the starboard end of the cross-arm on the club house flag pole. He is visited by another commodore; where should his flag be flown?

A.—Give it up. Can anyone answer?

[These last three questions are not covered in any book on the subject or in any of the yacht club books on yacht routine that we have found.]



THE NEW CLASS OF STAMFORD YACHT CLUB ONE-DESIGN, 40-FOOT WATERLINE SCHOONERS, DESIGNED BY COX & STEVENS

Driftwood from Alongshore

Lloyd's Yacht Register for 1913

With the opening of the 1913 yachting season, the eleventh annual edition of Lloyd's Register of American Yachts has again made its appearance. The book contains the particulars of 3,557 power and sailing yachts distributed in all parts of the United States, Canada, Mexico and the West Indies, located as far north as Nova Scotia and British Columbia and as far south as Mexico, Bermuda and Cuba. The yacht clubs of this same territory, to the number of 526, with thirty-six yachting associations, are also included, with the full list of officers for the current year. The yacht owners number 3,550, the address of each being given.

The new yachts of the year, to the number of a little more than 300, are made up mainly of cruising launches of 30 to 50 feet length, the majority of the raised-deck and trunk cabin type. There are also a number of cruising yachts of about 100 feet, driven by gasolene engines, representing the latest progress in this most useful type. The steam division has been increased by several large cruising yachts and a few of medium size.

The most interesting development of the year in building is the new one-design class of 50-footers, wooden yachts, 72 feet over all, 50 feet load-waterline, 14 feet 6 inches breadth and 9 feet 9 inches draft, rigged as knockabout sloops. The largest of the sailing yachts is the new schooner Vagrant, built for Mr. Harold Vanderbilt, a composite vessel 78 feet long on the water, to be raced abroad; while Mr. Max Agassiz has replaced the old Kirin by a steel auxiliary schooner, with an engine of the Diesel type, 82 feet load-waterline, for cruising.

This year's Register contains a total of 506 pages, including the American Yachting Trade Directory, which has become a very valuable feature; the forty-six colored plates show the burgees of 548 yacht clubs and associations and the private signals of 1,822 yacht owners, together with national ensigns, weather signals and the international code flags. It is issued in the two standard bindings—blue cloth with gilt edges and owner's name on the cover, and plain yacht canvas. It is published by Lloyd's Register of Shipping, 17 Battery Place, New York City.

On Chesapeake Bay

Yachtsmen of the Chesapeake are busy planning for the annual cruise of the Chesapeake Bay Yacht Racing Association which will begin its summer outing at Baltimore on the 19th of July. On that day there will be a series of races for both sail and power craft. The next day the fleet will go to Annapolis, the sail boats racing. The day after the fleet will sail for Oxford, and again the sailing craft will race. At Oxford there will be a series of motor boat races and a reception by the Chesapeake Bay Yacht Club. Then the fleet will make its way, at leisure, to Cambridge to attend the annual regatta of that club, which was postponed from June 9. Under the auspices of the Cambridge club there will be races for all classes of sail and power craft, with a special race between Class P sloops for the challenge cup offered by Phillips Lee Goldsborough, Governor of Maryland. From Cambridge the sailing craft will race to Annapolis, and there the Class P sloops will sail the second leg for the cup. The third leg will be sailed in Baltimore, probably on Labor Day.

The presenting of this cup by the Governor of the State is expected to develop racing in Class P. Commodore Alfred I. duPont, of the Cambridge Club, purchased the Gielow sloop Sue to represent his club. The other entries will be the Zillicoa, of the same club; the Ojigwan, of the Chesapeake Bay Yacht Club, and the Helen, of the Corinthian Yacht Club, of Baltimore. Under the deed of gift three races will be sailed each year on a point basis, and the winner is to hold the cup until the following year, when he becomes the defender.

Buffalo Regatta and New Niagara River Trophy

The annual Buffalo regatta, which in the past has been one of the best racing events of the year, will be held on Niagara River, September 2, 3, 4, 5 and 6, under the auspices of the Motor Boat Club of Buffalo, and in connection with the Perry Centennial celebrations.

Entries have already been received from many of the fastest boats in the world, and the event is sure to attract all the fliers in this country.

Buffalo is justly celebrated for its hospitable treatment of racing men, and this year they will again take full charge of the visiting boats upon arrival; put them in the water; take them to the club anchorage; entertain the crews during the meet, and upon the completion of the events start them off for home again, all with the compliments of the Buffalo Motor Boat Club.

J. Stuart Blackton, commodore of the Atlantic Yacht Club, has offered to Commodore William J. Conners, of the Motor Boat Club of Buffalo, a beautiful trophy to be a perpetual challenge cup, or to be raced for on terms similar to the E. R. Thomas trophy. Commodore Blackton's letter, which explains itself, is as follows:

My Dear Commodore:—I have ordered from the Meriden Company, of New York, a sterling silver trophy, which will be finished in about a month's time. It will be known as the J. Stuart Blackton Speed Trophy, and I take great pleasure in herewith formally presenting it to the Buffalo Motor Boat Club to be raced for during the coming season.

I shall be pleased to have the regatta committee draw up a set of articles governing the conditions under which the trophy is to be raced for. You may make it either a perpetual challenge trophy to be held each year by the boat winning same. or, if you see fit, to be raced for on terms similar to those governing the E. R. Thomas Trophy.

I am not quite certain which boat I shall bring to Buffalo this season, but you can rely on my being there with something that will do more than 11 miles an hour.

With most cordial wishes for the success of your regatta and your excellent and hospitable club, I have the honor to remain,

J. Stuart Blackton.

Philadelphia-Corinthian Long-Distance Races

With an uninterrupted run of 154 nautical miles in 14h. 54m. 31s., Commodore Brigham's Caliph won the Philadelphia-Overfalls Lightship race on Saturday, May 31.

The race started on Friday, the first boat, the Dream, being sent across the line at 2 P. M. The run down the river and bay and the run back gave the skippers all they wanted to do. A heavy rain set in early on Friday evening, and a thick mist settled over the river and bay, making it difficult for the navigators to gage the distance of the lights and to pick up buoys. A heavy sea was running, which tested the seaworthiness of the boats to the utmost. All of the eight boats which started finished without difficulty and made good time.

Boat and Owner.	Rating.	Time Allowance.	Corrected Time.
Caliph M. E. Brigham	44.1	3.29.16	12.18.43
Dream, C. L. Lagen	37.0	6.16.44	12.27.12
Ponce, P. F. du Pont	43.7	3.37.07	12.53.03
Marguerite II, A. B. Cartledge	52.4	1.11.07	13.05.17
Barbara II, W. M. Duncan	50.3	1.41.36	13.37.05
Black Duck, Alex Sellers	58.0	scratch	14.16.26
Elfin, A. W. Gibbs	46.9	2.35.48	14.51.36
Shark, S. H. Collom	48.7	2.06.45	15.15.30

Motor Boat Race Around Manhattan Island

On Sunday, June 15, twelve motor boats raced around Manhattan Island, a distance of 25.25 miles, for prizes offered by the Hudson River Motor Boat Club. The Valiant, owned by J. Sauer, won in the open boat class, beating C. Firth's Bunk III by 2m. 47s. corrected time, but the Firth boat made the fastest time over the course—2h. 38m. 26s. The winners in Classes B and C, respectively, were the Yenoor, owned by P. Roney, and the Eleanor S., owned by E. Seltzer.

The boats were handicapped at the start, which was made off the club house at 151st Street and the Hudson River, F. W. Pratt, W. J. Stewart and A. B. McCrea sending the first boat away at 11 o'clock. Other racing events of the club for the season are:

June 29—Club races for Point Trophy, over 5-mile triangular course off club float.

July 13—Club race for ladies.

July 27—Club races for Point Trophy.

August 10—Second annual "Rockland Light and Return." Start at 3'clock A. M.

August 24—Club races for Point Trophy.

September 6—Third annual "Poughkeepsie and Return." Start [illegible] P. M.

September 21—Club race for Point Trophy.

Activity at the New Rochelle Yacht Club

Some seventy-seven members have been admitted to the New Rochelle Yacht Club this spring, bringing the number at present up to 291. It is expected that the membership will reach 300 by July 1. The club having purchased its residence on Harrison Island, is planning to build a new club house next fall, which will be ready for operation for the season of 191[illegible]

The increased membership, the prevailing enthusiasm and the good financial condition of the club assure it a banner year for 1913. Its members own more boats than hail from any other club on Long Island Sound and it is one of the most active clubs on the Sound in actual racing and cruising.

The annual cruise of the club will be held August 9 and 16, inclusive, and the route will be to Thimble Islands and return, via ports, the short runs enabling the participation of the smaller boats in the fleet. Twenty-six boats have already entered at this early date, and at least fifty yachts are expected to start.

The New Rochelle Club will participate actively in the week's celebration of the 225th anniversary of the city of New Rochelle. There will be a special entertainment on Saturday, June 28. This is also the date of the annual spring regatta of the New Rochelle Yacht Club, and will form a fitting occasion for the entertainment of the racing crews that participate.

A Fast 20-Footer

One of the fast boats that has so far made her appearance this year is the 20-foot monoplane Little Joker, a picture of which appears on the frontispiece, owned by Henry S. Ford, a member of the Tappan Zee Yacht Club, of Nyack, N. Y. This boat is from designs furnished by John [illegible]

Connolly, Jr., and is practically the same as the little single-step hydroplane whose plans were published in the October number of YACHTING. The boat is 20 feet long and is equipped with a 150-horsepower, eight-cylinder Sterling racing engine, designed to turn at 1,500 revolutions per minute, the propeller being geared to the engine 1½ to 1. This little boat has no step, and she planed perfectly at 600 revolutions per minute, and at 1,100 revolutions per minute the hull was exposed for three-fourths of her entire length. She ran at a very efficient angle of plane, the rise on the bow being ony 6 inches above water when running at full speed and the hull being perfectly balanced. The boat was not built with any particular view to saving weight, and she weighs complete with engine 2,865 pounds.

At Nyack, where trial races have been held, she has done extremely well, especially in rough water, and she is said to have made a measured mile between shore market (said to have been surveyed) in 1m. 25s., or at the rate of 42.45 miles per hour. The only race in which the boat has been entered was that of the Columbia Yacht Club, where she ran into a severe squall and thunder storm and shut down until it was over. It is said that the boat will be entered and sent to Huntington for the international trials.

Columbia Yacht Club Regatta

At the Columbia Yacht Club, of New York, it was again shown on June 7 that the Hudson River is a poor place to hold speed boat races on account of the driftwood that is usually in evidence in such quantities as to seriously endanger the lightly-built craft. At the opening regatta of the club, held on this date, a number of boats were disabled from this cause. James Simpson was particularly unfortunate. He started the Cinderella, a new displacement boat of the Peter Pan IV type and Peter Pan V, his fast hydroplane. These two boats have been reeling off fast miles and were expected to win, but accidents with floating driftwood put both out of the racing.

In the displacement class, Vice-Commodore Albert E. Smith started his reliable Edith II, and she finished alone, making the 30 miles to Ardsley and back in 1h. 22m. 15s.

In the hydroplane class over the same course there were four starters. Tiny Tad not only made the fastest time but on corrected time she was able to beat the Gunfire, Jr., owned by W. J. Brainard.

The winners in the various classes were: Open boats, 55 rating and under, Sea Robin; open boats, over 55 rating, Eastern Star; displacement speed boats, Edith II; hydroplanes, Tiny Tad; cruisers under 38 feet over-all length, Alfred S.; cruisers over 38 feet over-all length, Senorita.

Buck's Harbor Yacht Club

The Buck's Harbor Yacht Club, of South Brooksville, Me., has just completed a picturesque new club house, with broad piazzas commanding a fine view of this beautiful harbor, situated at the entrance of Eggemoggin Reach. A feature of the new house is the large fireplace and chimney of granite construction, which is a work of art.

A full programme, including club races for sail and motor boats, is planned for the season. The annual regatta will be held in August, to which invitations are being sent to all boats in this vicinity to compete for the cups which the club offers. It is expected that a large number of boats will enter these races.

Colonial Yacht Club Fixtures

The following racing fixtures of the Colonial Yacht Club for this season have been announced:

July 12 and 13—Open motor boat invitation race to Cornfield Light and return.

July 26—Rockland Light and return. Handicapped according to Viking rules.

August 9—Open invitation race to Poughkeepsie, returning on August 10.

September 7—Club race around Manhattan Island. Handicapped on past performance.

Eureka Yacht Takes San Francisco Cup

For the first time since the race for the Perpetual Challenge Cup was inaugurated in 1895 the coveted trophy will leave San Francisco. The sloop Oreades, of Eureka, turned the trick on May 25, and the cup is now in custody of Commodore A. W. Way. Typical San Francisco Bay weather ruled during the race, or rather, the event, as an accident to the defending yacht, Challenger, placed that craft out of commission soon after the start. The latter yacht secured a strong lead immediately after the start had been made, and was thoroughly at home in the choppy sea and stiff beat to windward. Less than half-way out to the Presidio buoy, however, a new bronze turnbuckle on the bobstay parted, and the mast snapped with a crash, throwing the canvas to the deck and slightly injuring several of the crew. The disabled craft was towed to Sausalito, while the Oreades continued over the course.

At first it seemed as though the visiting craft could not possibly cover the 14-mile course in the 4-hour time limit, as such slow progress was made in the beat out, but later the wind died down slightly and the course was covered in 3h. 40m. 43s. actual time.

Oreades was sailed by Skipper W. S. Way, R. J. Kellen, W. S. Clark, Bernard Bartlett, J. E. Clark, Rex L. H. Hicks, Jr., and William Kressman. Those aboard the Challenger were Skipper M. G. Morrow, A. F. Stevens, Gordon Morrow, Ludwig Koster, Harry Hellen, Alban Wray and W. K. Smith.

Another Ocean Race for the Brooklyn Challenge Cup

There will be another long-distance race this year for the Brooklyn Yacht Club Ocean Challenge Cup, now held by the New Rochelle Yacht Club. This latter club has been challenged by the Harlem Yacht Club for a race, the challenging boat being the Ediana, owned by Mr. John A. Crowley. The challenge has been accepted, and the date set for the start of the race is July 4, at 10 A. M. The course will be from Echo Bay, New Rochelle, to and around Vineyard Lightship at the entrance to Vineyard Sound, thence outside of Block Island and Long Island, finishing at Gravesend Bay, a distance of 280 nautical miles. The New Rochelle Yacht Club has named B. R. Stoddard's Amada as the defending boat.

The cup was first won by the yawl Tamerlaine, of the New Rochelle Yacht Club, and owned by Frank Maier, in a race from Brooklyn to Hampton Roads. The following year it was won by Mopsa, of the Harlem Yacht Club, owned by F. C. and W. A. Sullivan, in a race from New Rochelle to Montauk, thence to Cape May Lightship and back to Gravesend Bay. The next winner was Victory, representing the New York Athletic Club, and owned by H. A. Jackson, Jr. The following year it was again won by the New Rochelle Yacht Club with the Waialua, owned by H. L. Stone, the last two races being over the same course as the present one. The reorganized Brooklyn Yacht Club will handle the finish of the race at Gravesend Bay this year. Other entries for the race will be received by the New Rochelle Yacht Club up to June 28.

A Useful Little Book

We have recently received one of the most useful little books for the yachtsman that has ever been published. This is the Pilot's and Yachtsman's Course Book, by Mr. David Poivonen, recently published by G. B. Putnam & Sons. The book contains the correct magnetic courses and distances between practically all points on the coast from Boston, Mass., to New York. These courses are conveniently grouped, geographically, so that any desired course can be found at a moment's time. It differs from most course books, in that the average book of printed courses only the main steamship courses are given, while in this book practically every course may be found. For instance, if one wanted to go from Port Jefferson to Saybrook, Conn., the course and distance could be found in this book without having to work it out from the chart. In this way it is a great time-saver and is most convenient.

Programme for Perry Centennial Regatta at Toledo

The following is the complete programme as outlined by the Inter-Lake Yachting Association for the two days of speed boat racing at Toledo in connection with the Perry Centennial Regatta, July 28 to August 2. The first two days the racing will be held at Toledo, the balance of the week at Put-in-Bay:

SPEED BOAT RACES AT TOLEDO, OHIO.

MOTOR BOAT CARNIVAL OF NATIONAL ASSOCIATION OF ENGINE AND BOAT MANUFACTURERS.

Date.	Starting Time.	Distance Miles.	Handicap Rules.	Class.	Heat.	Measurements.
July 28	9:30 A. M.	30	None	C	First	Under 40'.
	11:00 A. M.	21	A. P. B. A.	A	First	33' and under.
	11:30 A. M.	21	A. P. B. A.	B	First	40' and over.
	1:30 P. M.	30	None	C	Second	Under 40'.
	3:00 P. M.	21	A. P. B. A.	A	Second	33' and under.
	3:30 P. M.	21	A. P. B. A.	B	Second	40' and over.
	5:00 P. M.	21	A. P. B. A.	A	Third	33' and under.
	5:30 P. M.	21	A. P. B. A.	B	Third	40' and over.
July 29	9:00 A. M.	30	None	C	Third	Under 40'.

PERRY CENTENNIAL CLASS CHAMPIONSHIP RACES—TOLEDO, OHIO.

July 29	11:00 A. M.	20	None	L	First	Under 20'.
	11:10 A. M.	20	None	R	First	Under 26'.
	11:20 A. M.	20	None	S	First	Under 32'.
	11:30 A. M.	20	None	T	First	Under 40'.
	1:00 P. M.	20	None	L	Second	Under 20'.
	1:10 P. M.	20	None	R	Second	Under 26'.
	1:20 P. M.	20	None	S	Second	Under 32'.
	1:30 P. M.	20	None	T	Second	Under 40'.
	3:00 P. M.	20	None	L	Third	Under 20'.
	3:10 P. M.	20	None	R	Third	Under 26'.
	3:20 P. M.	20	None	S	Third	Under 32'.
	3:30 P. M.	20	None	T	Third	Under 40'.

$1,800 prize money will be distributed between classes L, R, S and T as follows: Firsts, $300 in each class; seconds, $100 in each class; thirds, $50 in each class.

On Wednesday, July 30, at 7:30 A. M., prompt, there will be a squadron cruise to Put-in-Bay. The fleet will rendezvous off the Toledo Yacht Club, and move promptly at time stated above. The flagship Priscilla, with Commodore George H. Worthington in command, will lead, the fleet following in single file. International Code of Signals will be used.

The balance of the week will be devoted to racing in various classes, cruises, bang-and-go-back races, etc.

Racing Calendar for July Will be Found on Page 56

The Challenge Accepted The New York Yacht Club, through its America's Cup Committee, has, it seems, definitely accepted the challenge of Sir Thomas Lipton for a race in 1914 for the America's Cup. It is understood that it will meet him with a boat of approximately the size of the one he challenged with, 75 feet waterline, and will also race under the present racing rules of the Club, commonly called the Universal Rule and practically the rule adopted by all the large yacht racing associations of this country. The outcome of this affair seems to be somewhat in the nature of a victory for Lipton, inasmuch as the Club is meeting him with a boat of the size he asked for and is even going him one better by granting a race under its present rule instead of the old rule under which the last contest for this Cup was held, and which Sir Thomas rather thought would be again insisted upon. We say this in the best spirit, and think that the New York Yacht Club has made a wise move in granting a race under a rating rule that produces as fine a type of boat as the present rule. It should not only be a good thing for this particular race, but it should put a stop to any claim that might be made that the English boats are at a disadvantage on account of the necessity of the trans-Atlantic trip; for a modern 75-footer, particularly under the Universal Rule and with a jury rig, is fully competent to make the passage across the Western Ocean during July. It should also have a beneficial effect on the future type of boat for America's Cup Races.

It is expected that a number of boats will be built to defend the Cup. Probably Herreshoff will design one, though there are conflicting rumors as to this, and it is more than possible that Gardner will have a boat in the lists, and that the Eastern yachtsmen will be represented by a boat built around the Cape. However, it is too early yet to say anything definite on this score.

An Amateur to Handle Shamrock If reports from the other side are to be believed, Sir Thomas Lipton will institute something of an innovation in sailing his next race for the America's Cup in 1914, in that the Shamrock will be handled and sailed by an amateur. England boasts of a number of first-class amateur yachtsmen capable of handling a boat of this size and Lipton has asked Mr. W. P. Burton, of the successful 19-meter cutter Octavia, to handle and sail the boat for him throughout the season and during the America's Cup match. Burton is ranked as one of the best, if not the most successful, amateur skippers in England, and it is gratifying to see him selected to handle the big cutter. Other amateur yachtsmen have sailed on boats in America's Cup races before, but in an advisory capacity only, and if Mr. Burton does sail the new boat it is likely that he will be in entire charge, though he will, of course, have the benefit of the help of a professional skipper during the races. Nicholson, the designer of the new boat, is also in the front rank of amateur yachtsmen and will undoubtedly sail on the boat also.

We have many yachtsmen in this country who have the knowledge and have had the experience to qualify them to handle a 75-foot sloop in such a series of races, and it is hoped that at least one of them will be found on the deck of the American boat during these races. As a matter of fact, there are more first class amateurs to-day competent to handle a large sloop than there are professionals, many of the old timers having passed away, and those who remain and have had experience in handling a racing sloop of this size being so few as to be numbered on the fingers of one hand. Here's hoping that both the challenger and defender are in command of a strictly amateur sailor.

International German-American Sonder Races Much interest is being taken in the forthcoming International Sonder Class Race with the Germans, which will be held off Marblehead early in September and for which a number of new American sonder boats have been built. The American trial races will be held off Marblehead in the middle of the summer to select the team of three to defend the Cup. In Germany the elimination trials are being held at this writing for the selection of the German team, and are arousing great interest in German yachting circles. The yachts entered abroad for these preliminary trials are: The Palmstroem, Eberhard Marquardt, Stuttgart; the Seehund, Otto Berghoff and Wilhelm Spindler, Berlin; the Resi V, Julius Stahn, Berlin; the Wittelsbach IX, Christof Alt, Berlin, and the Serum, Waldemar Tietgens, Hamburg.

The German team, when selected, will be shipped to this country in plenty of time to get properly tuned up off the Eastern Yacht Club before the start of the match.

A Long-Distance Race to Narragansett Bay In connection with the race week of the Narragansett Bay Yacht Racing Association, August 7 to 13, at the Rhode Island and Edgewood Yacht Clubs, YACHTING will offer a trophy for a long-distance race from New Rochelle to Narragansett Bay, one of the longest cruising races of the year. The Narragansett Bay race week will be one of the biggest racing affairs of the season, and the Narragansett Bay Clubs have issued an invitation to all of the yacht clubs on Long Island Sound to send boats to participate in the event. This long-distance race is given to afford the boats that will go to Narragansett Bay an opportunity for a long ocean race on the way.

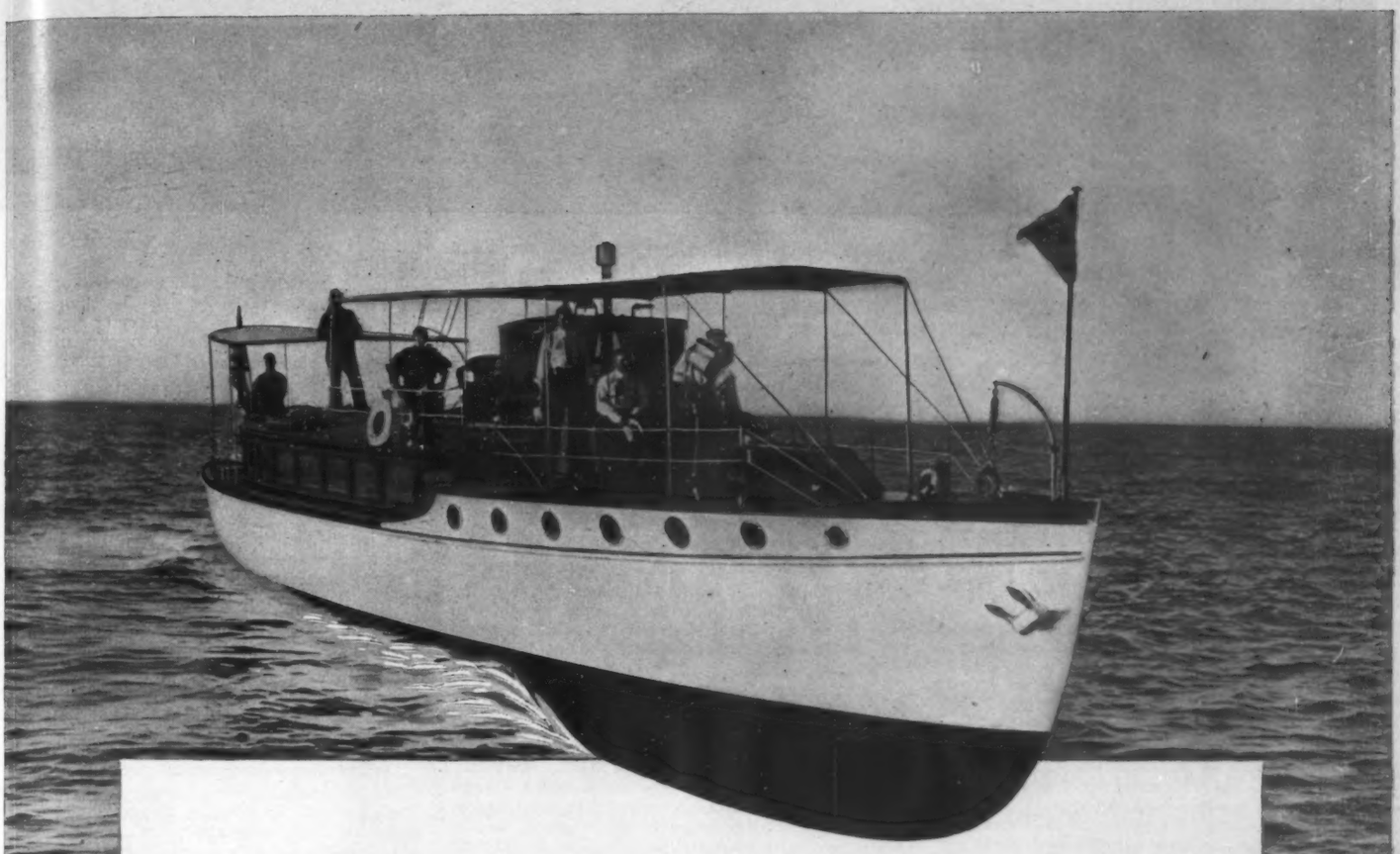
The race will be started on Wednesday, August 6, at 11 A. M., the finish being either off the Rhode Island Yacht Club, or off Newport, at which point the racers can meet the combined fleets of the Rhode Island, Buzzard's Bay and other Long Island clubs which rendezvous there, and start Thursday afternoon for a race from Newport to Pawtucket at the head of Narragansett Bay. Full details of the course, etc., will be announced later. The boats will race in one division on some simple racing measurement rule, such as waterline plus one-half the overhang, the full conditions being in the hands of the Regatta Committee.

The course is an ideal one, being some 150 miles in length, and under ordinary conditions, can be covered in from 30 to 36 hours. Starting Wednesday forenoon, the boats should finish some time Thursday afternoon, and can take part in the racing of the Narragansett Bay Yacht Racing Association on Friday, Saturday and Monday, Tuesday and Wednesday of the following week.

At the Narragansett Bay race week daily and series prizes will be offered in the following classes: Rhode Island Y. C., Classes "P," Universal; "P," Narragansett Bay Y. R. A.; Buzzard's Bay 30's; "Q," Universal; "Q," N. B. Y. R. A.; 18-foot Class I, special; sonderklasse; Westport Harbor 15-foot class; Buzzard's Bay 15-foot class; Warwick Neck 15-foot class, and N. B. Y. R. A. classes R, S, Z, and catboat D and E, and Handicap.

The August Issue of YACHTING will be a Special Perry Centennial Number, Ready July 26.

DON'T MISS IT, if You are Interested in the Biggest Event of the Year.



Valspar Bronze Bottom Paint

Your boat will have a clean, smooth, speedy bottom that will keep free of barnacles and all other forms of sea life if you use Valspar Bronze Bottom Paint.

This is a compound of Valspar—the waterproof varnish, very tough and durable—with pure French leaf bronze. A perfect anti-fouling paint.

Ready to use from the can and will not harden or turn green in it. Dries quickly.

Apply directly to the wood, stirring thoroughly and continually and brushing out each coat well. Use three coats, rubbing the last lightly with sand-paper.

One application good for all season. Covers 600 square feet to the gallon—one coat. Price $1.50 per quart can.

VALENTINE'S MARINE PRODUCTS

Valspar Enamels, water and weather resisting; Valentine's Yacht White—gloss or flat finish, Valentine's Yacht Black—semi-gloss, will not turn gray; Valspar Aluminum Paint—does not chip or peel in the weather; Valspar Brass Polish Preservative—to protect polished brass; Valspar Boot Topping—red or green; Celox Wood or Metal Primers and Fillers and

VALENTINE'S VALSPAR
The Varnish That Won't Turn White

Send for nearest dealer's name, booklets on boat finishing and particulars of above products

VALENTINE & COMPANY, 456 Fourth Avenue, New York

NEW YORK CHICAGO BOSTON (Established 1832) TORONTO PARIS AMSTERDAM

Of Interest to the Skipper

A Permanent Winton Exhibit in New York

The Winton Gas Engine & Manufacturing Company, of Cleveland, Ohio, are placing a permanent exhibit on the Concourse in the Hudson Terminal Buildings, New York City, of one of their 150-200-horsepower, six-cylinder engines, finished in white enamel, with all brass and bright work nickel plated. This is probably one of the finest finished engines ever placed on exhibit.

The Winton Company state that this finish is standard on all of their engines. A white enameled engine room is now possible, and this company claims that with all of their working parts enclosed and with no exposed oiling system, it is just as easy to have a clean, white engine room as it is to have a white bath room.

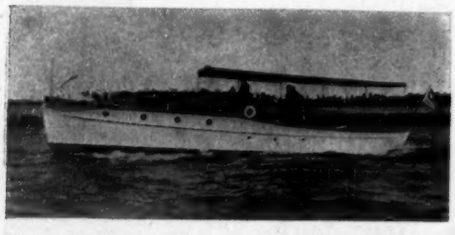
The Winton Company's efforts to produce quiet, clean and smooth-running engines and clean engine rooms is commendable, and will be appreciated by the owners of all large motor yachts.

Sterling Electric Lighting Outfit

All of the new Sterling heavy-duty engines can now be equipped with the Holtzer-Cabot electric lighting dynamo, the dynamo being built right into the engine and driven by a *silent chain* from the magneto shaft, making a highly efficient and noiseless piece of mechanism that does its work precisely and continuously and without any attention from the operator.

These new Sterling engines can also be equipped with the Rushmore electric engine starter, a starter absolutely free from ratchets, friction clutches, shifting levers and other mechanical complexities which have hitherto appeared to be inseparable from a good electric engine starter.

The Rushmore starter, when attached to a Sterling engine, acts directly on the flywheel without intermediate gears, a pinion keyed fast on the motor shaft meshing with a gear on the flywheel. This pinion is normally out of engagement. The closing of the starting switch causes the pinion



Chatana, a 48-foot cruiser, powered with a 20-35 H. P. Sterling that gives her a speed of over 10 miles per hour

to automatically engage the flywheel gear before the armature of the motor starts rotating. As soon as the engine picks up, the pinion automatically and silently slides out of mesh. There is no mechanism whatever except the starting motor itself and the starting switch. The motor has a turning force at the flywheel in excess of 400 pounds, which is largely in excess of the force developed by ordinary engine starters. The motor is wound for a six-volt battery to avoid complications resulting from use of different voltages for starting and lighting. This starting equipment has been thoroughly tested out by the Sterling Engine Company and found to be the most practical at present on the market.

The picture which we reproduce herewith is of Chatana, a 48-foot cruiser with a beam of 10½ feet, owned by Mr. James G. Heaslet, of Detroit, Mich., and powered with a 1914 model Sterling four-cylinder, 20-35-horsepower engine, a 4⅜-inch bore, 5½-inch stroke. A speed of 10.14 miles per hour was obtained on her trials.

A Shipmate Heating Stove

A stove that will make a distinct appeal to the cruising yachtsman who likes to put his boat in commission early and keep her in until late in the season is the Shipmate heating stove manufactured by the Stamford Foundry Company, of Stamford, Conn. There has long been a demand for some kind of heating arrangement that does not take up much room and yet will keep the cabin warm and snug in cold or wet weather. These heating stoves come in small sizes, with the diameter of the globe of the stove which carries the coal only 11 and 12 inches, the total height of the two smallest sizes being 31 or 32 inches. They have wire rods and turn-buckles for fastening to the floor or deck to keep them in place. Any one who has experienced the comfort of a small coal stove in a cabin on a cold day will appreciate these little yacht heaters. Further particulars and prices may be had from the Stamford Foundry Company, Stamford, Conn., U. S. A.

New Assistant Treasurer for the Detroit Lubricator Company

The Detroit Lubricator Company, of Detroit, Mich., manufacturers of lubricators and oilers for marine engines, announce a change in the personnel of the force of the company, due to the fact that Mr. John Higinbothan has associated himself with the company as assistant treasurer. Mr. Higinbothan was formerly connected with the National Biscuit Company in the same capacity.

A New Catalogue of Weckler Boats

The Weckler Boat Company, of 2719 Irving Park Boulevard, Chicago, announce that they have recently issued their new catalogue of Weckler boats, and it is now ready for distribution, and may be had by those interested in motor boats of every description by writing to the Weckler Company. It is a very handsome and complete booklet, showing the various types of stock boats built by the Weckler Company, which range all the way from the small speed hydroplane to large cruising boats complete in every detail. The Weckler Company is prepared to build boats complete in every detail, including the furnishing and installing of the power plant.

Electrene Fire Gun

It has come to be generally acknowledged that for boats carrying gasolene or propelled by electricity nothing has yet been discovered to compare with carbon tetrachloride as a fire extinguishing agent, provided it is made always available for use at a moment's need.

The Electrene Company, of Whitehall Building, New York, claim that their compressed air fire gun furnishes one of the best means of distributing this fire extinguisher fluid yet invented, in that it leaves both hands free to direct the stream o the fire.

The Electrene fire gun is particularly strong and well made. It can be used by anyone, with a little skill and effort as is necessary for playing garden hose. It may be recharged any numbe of times at slight expense. It will shoot from an direction, and carries a powerful stream, so tha it can be directed into a burning craft from a tender or dinghy alongside. One of the best-known yachtsmen in the country says he will never g out again without Electrene, and he points ou the extremely important fact that this type of fire gun, in case of a fire in a hold or between decks where it would be simply impossible to enter, ca be used by simply opening the nozzle and throwing in the machine to do its own work. A doze Electrenes carried on an oil barge on the Hudson put out a bad fire before any other help coul be brought. The barge was carrying some 10,00 gallons of gasolene.

Electrene was carried as part of the regular equipment by many of the most famous boats exhibiting at the New York Motor Boat Show, including Peter Pan V, speed demon Reliance and Baby Reliance II.

Speedway Engines in the China Sea

As an indication of what the Speedway marin engines, built by the Gas Engine & Power Com pany and Chas. L. Seabury & Co., Con., of Morr Heights, N. Y., will do under hard conditions, is interesting to hear of the performance of tw of these engines in the Orient last winter. Las year two 70-foot vessels were built in Hong Kon for use in Manila, Philippine Islands. Each boa was fitted with a 100-horsepower Speedway en gine, which was shipped to Hong Kong and in stalled there. Both of these boats made the tr from Hong Kong to Manila, a distance of 6 miles across the rough China Sea, under the own power and without a stop. The voyage oc cupied but three days. While a contract speed of 8½ knots was called for, it is said that bot vessels have done over 10 knots an hour.

Kermath Engines for 1913

The Kermath marine motor for 1913 show many improvements in details. While the Ker math Manufacturing Company, of Detroit, Mich still continues to build one model only, they ar bending their efforts to the perfection of thei product.

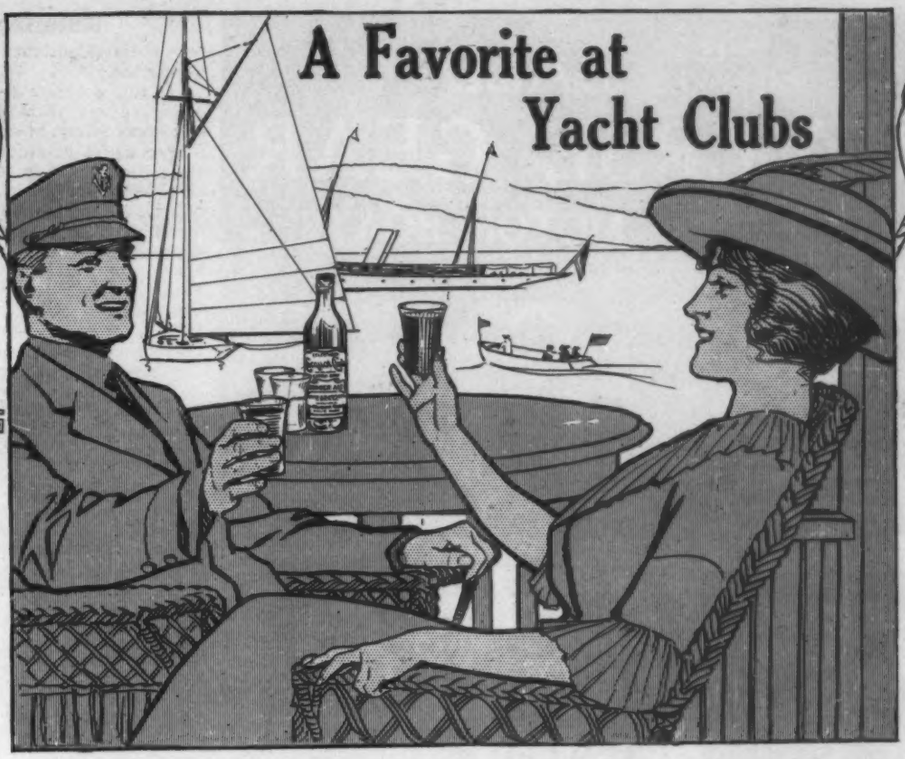
The inlet and exhaust manifolds are being counterbored, and a bushing made of seamless steel tubing is inserted between the manifold and cylinders, which are also counterbored. A very neat set of controls with spark and throttl are being installed which can be carried to th bulkhead if required.

The oiling system has undergone a slight change, which will materially decrease the amoun of lubricating oil consumed by the engine. The changing of all pump shafts and parts to bronz will, of course, be appreciated by persons on sal water. Formerly the pump shafts were made o steel. One thing that was quite necessary is th globe valve and water pipe which have been in stalled so that the outlet water can be admitte into the exhaust pipe.

The bearings are all interchangeable, die cas nickel babbitt, and the crankshaft bearings hav a total length of 9 inches, and each of the con necting rod bearings is 2¼ inches. The crank shaft is 1⅜ inches in diameter.

It is by standardizing their product and con tinuing to make only one size that this company is able to maintain its low prices for such a high class article.

A Favorite at Yacht Clubs



CLICQUOT CLUB satisfies, refreshes, cools. It's delightful, gratifying taste comes with first sip from the first glassful. It lacks that harsh, throat-burning quality common to other ginger ales.

Clicquot Club GINGER ALE

In spite of its reasonable cost—about five cents per glassful when bought from the grocer—"Clicquot Club" contains the best of everything. The best quality pure, granulated cane sugar. Choice ginger from which the resin is removed, making "Clicquot Club" mildly laxative instead of constipating. Oils of limes and lemons pressed directly from these fruits. Crystal pure water from Clicquot Springs. The reasonable price of "Clicquot Club" is possible solely because of the great demand for it.

TWO LARGE GLASSES IN EVERY BOTTLE

OTHER CLICQUOT CLUB BEVERAGES:

Sarsaparilla Birch Beer Root Beer Lemon Sour Orange Phosphate

Sold by the better class grocers by the case, dozen or bottle. *At a price amounting to about 5 cents per glassful.*

The Clicquot Club Company, Millis, Mass.